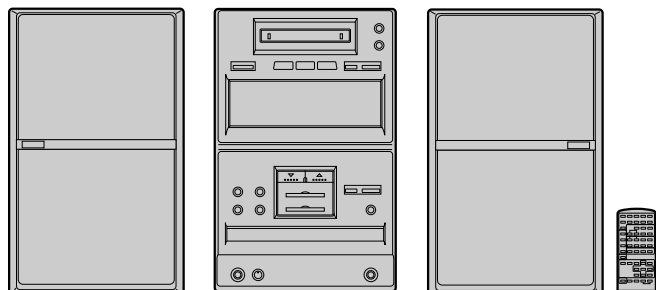


SHARP SERVICE MANUAL

No. S0781MDX5H///



MD-X5H CP-X5H



US and foreign patents licensed from Dolby Laboratories Licensing Corporation.

MD-X5H and CP-X5H constitute MD-X5H.

- In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified should be used.

• Note for users in UK

Recording and playback of any material may require consent which SHARP is unable to give. Please refer particularly to the provisions of Copyright Act 1956, the Dramatic and Musical Performers Protection Act 1956, the Performers Protection Acts 1963 and 1972 and to any subsequent statutory enactments and orders.

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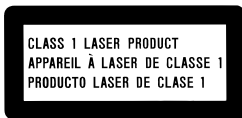
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SAFETY PRECAUTION FOR SERVICE MANUAL

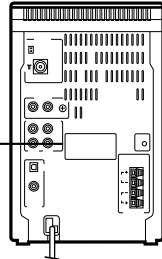
WARNINGS (CD)

THE AEL (ACCESSIBLE EMISSION LEVEL) OF THE LASER POWER OUTPUT IS LESS THAN CLASS 1 BUT THE LASER COMPONENT IS CAPABLE OF EMITTING RADIATION EXCEEDING THE LIMIT FOR CLASS 1. THEREFORE IT IS IMPORTANT THAT THE FOLLOWING PRECAUTIONS ARE OBSERVED DURING SERVICING TO PROTECT YOUR EYES AGAINST EXPOSURE TO THE LASER BEAM.

- 1-WHEN THE CABINET IS REMOVED, THE POWER IS TURNED ON WITHOUT A COMPACT DISC IN POSITION AND THE PICK-UP IS ON THE OUTER EDGE THE LASER WILL LIGHT FOR SEVERAL SECONDS TO DETECT A DISC. DO NOT LOOK INTO THE PICK-UP LENS.
- 2-THE LASER POWER OUTPUT OF THE PICK-UP UNIT AND REPLACEMENT SERVICE PARTS ARE ALL FACTORY PRE-SET BEFORE SHIPMENT.
DO NOT ATTEMPT TO RE-ADJUST THE LASER PICK-UP UNIT DURING REPLACEMENT OR SERVICING.
- 3-UNDER NO CIRCUMSTANCES STARE INTO THE PICK-UP LENS AT ANY TIME.
- 4-CAUTION-USE OF CONTROLS OR ADJUSTMENTS, OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.



LASER KLASSE 1
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT
LASER TRÍDY 1
LASER TRIEDY 1



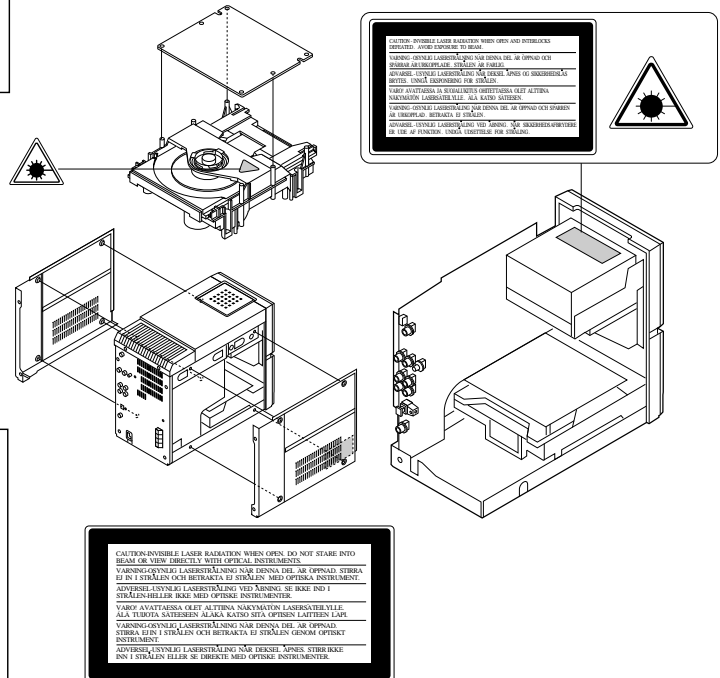
VAROITUS! LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESSA MAINITULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.

WARNING - OM APPARATEN ANVÄNDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANVISNING SPECIFICERAS. KAN ANVÄNDAREN UTSÄTTAS FÖR OSYNLIG LASERSTRÄLNING, SOM ÖVERSKRIDER GRÄNSEN FÖR LASERKLASS 1.

WARNINGS (MD)

The AEL (ACCESSIBLE EMISSION LEVEL) of the laser power output is less than class 1 but the laser component is capable of emitting radiation exceeding the limit for class 1. Therefore it is important that the following precautions are observed during servicing to protect your eyes against exposure to the laser beam.

- 1) When the unit case cover is removed and LOADING SW (SW 1956) is turned on and then PLAY SW (SW 1954 mechanism PWB) is turned on in a few second.
The laser will light for several second to detect a disk.
- 2) The laser power output of the pickup unit and replacement service parts are all factory pre-set before shipment.
Do not attempt to re-adjust the laser pick-up unit during replacement or servicing.
- 3) Under no circumstances stare into the pickup lens at any time.
- 4) If laser optical unit becomes faulty, replace the complete laser optical unit.
- 5) CAUTION-USE of controls or adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.



VARO !Avattaessa ja suoalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.
VARNING! Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

Precaution to be taken when replacing and servicing the laser pickup.

The following precautions must be observed during servicing to protect your eyes against exposure to the laser.

Warning of possible eye damage when repairing:

If the AC power plug is connected when the inner cover of the unit is removed, the laser will light up during focus access (about 1 second) (Fig. 2-1).

During this operation, the laser will leak from the opening between the magnetic head and cartridge holder (Fig. 2-2).

In order to protect your eyes, you must not look at the laser during repair.

Before repairing, be sure to disconnect the AC power plug.

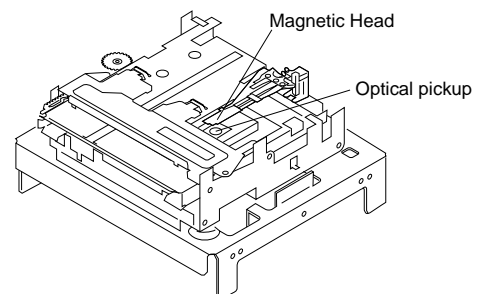


Figure 2-1

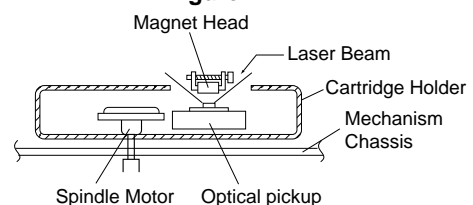


Figure 2-2

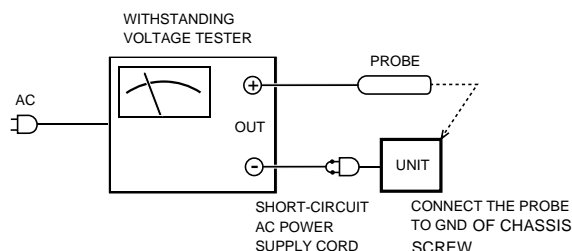
FOR A COMPLETE DESCRIPTION OF THE OPERATION OF THIS UNIT, PLEASE REFER TO THE OPERATION MANUAL.

IMPORTANT SERVICE NOTES (FOR UK ONLY)

Before returning the unit to the customer after completion of a repair or adjustment it is necessary for the following withstand voltage test to be applied to ensure the unit is safe for the customer to use.

Setting of Withstanding Voltage Tester and set.

Set name	set value
Withstanding Voltage Tester	
Test voltage	4,240 VPEAK 3,000 VRMS
Set time	6 secs
Set current(Cutoff current)	4 mA
Unit	
Judgment	
OK: The "GOOD" lamp lights.	
NG: The "NG" lamp lights and the buzzer sounds.	



SPECIFICATIONS

MD-X5H

Main unit section

(MiniDisc recorder section)

Type:	MiniDisc recorder
Signal readout:	Non-contact, 3-beam semi-conductor laser pick-up
Audio channel:	Stereo; 2 channel Monaural; 1 channel (long-time recording mode)
Frequency response:	20 - 20,000 Hz
Rotational speed:	400 - 900 rpm CLV, Approx.
Quantization:	16-bit linear
Filter:	8-times oversampling digital filter
Error correction:	ACIRC (Advanced Cross Interleave Reed-solomon Code)
Coding:	ATrac (Adaptive Tranceformed Acoustic Coding)
Recording Method:	Magnetic modulation overwrite method
D/A converter:	1-bit
Sampling frequency:	44.1 kHz
Wow and flutter:	Unmeasurable (less than 0.001% W. peak)
Signal/noise ratio:	95 dB (1kHz)
Dynamic range:	90 dB (1kHz)
T.H.D at 1 kHz:	0.1%

(Compact disc player)

Type:	Compact disc player
Signal readout:	Non-contact, 3-beam semi-conductor laser pickup
Rotational speed:	200 - 500 rpm CLV, Approx.
Error correction:	CIRC (Cross Interleave Reed-Solomon Code)
Quantization:	16-bit linear
D/A converter:	1-bit
Filter:	4-times oversampling digital filter
Frequency response:	20 - 20,000 Hz
Signal/noise ratio:	95 dB (1 kHz)
Dynamic range:	90 dB (1 kHz)
Wow and flutter:	Unmeasurable (less than 0.001% W. peak)

(Tuner section)

Frequency range:	FM; 87.5 - 108 MHz AM; 522 - 1,620 kHz
Sensitivity:	FM; 8.0 μ V (75 ohms, unbalanced) AM; 650 μ V/m

(General)

Power source:	AC 230 V, 50 Hz
Power consumption:	80 W
Output power:	PMPO; 80 W (total) MPO; 40 W (20 W+20 W) DIN 45 324 RMS; 25 W(12.5 W+ 12.5 W) DIN 45 324
Input terminals:	Auxiliary (Analog); 2.0 V (30 kohms) Auxiliary (Digital-1) Auxiliary (Digital-2) Phono; 2.5 mV (10 kohm)
Output terminals:	Headphones; 16-50 ohms (recommended; 32 ohms) Speakers; 6 ohms Line out (Analog); 2.0 V (47 kohm)
Dimensions:	Width; 150 mm (5-15/16") Height; 241 mm (9-1/2") Depth; 307 mm (12-1/8")
Weight:	4.3 kg (9.5 lbs.)

CP-X5H

Speaker section

Type:	2-way 120 mm (4-3/4") woofer and 50 mm (2") tweeter type
Maximum input power:	25 W
Rated input power:	12.5 W
Impedance:	6 ohms
Dimensions:	Width; 146 mm (5-3/4") Height; 241 mm (9-1/2") Depth; 229 mm (9-1/8")
Weight:	2.2 kg (4.9 lbs.)/each

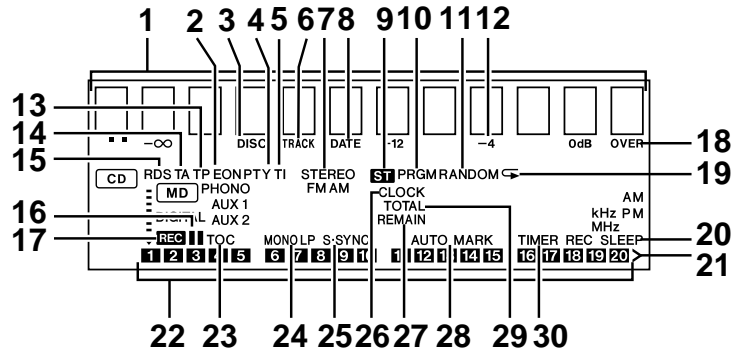
Specifications for this model are subject to change without prior notice.

NAMES OF PARTS

MD-X5H

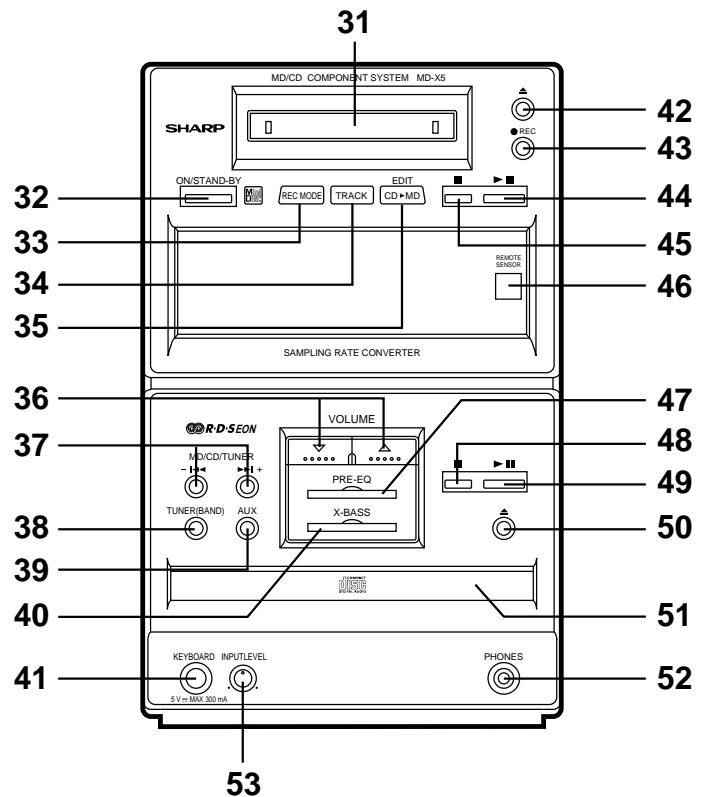
■ Display window

1. Level meter/Character Information Display
2. EON Indicator: EON
3. Disc Name Indicator: DISC
4. Programme Type Indicator: PTY
5. Traffic Information Indicator: TI
6. Track Name Indicator: TRACK
7. FM Stereo Indicator: STEREO
8. Data Indicator: DATE
9. FM Stereo Indicator: ST
10. Program Indicator: PRGM
11. Random Play Indicator: RANDOM
12. Recording Level Indicator
13. Traffic Programme Indicator: TP
14. Traffic Announcement Indicator: TA
15. RDS Indicator: RDS
16. MD Pause Indicator:
17. MD Record Indicator: REC
18. Recording Level Too High Indicator
19. Repeat Indicator:
20. Sleep Indicator: SLEEP
21. More Tracks Indicator: >
22. Music Schedule Indicators
23. MD TOC Indicator: TOC
24. Recording Mode Indicator: MONO LP
25. Sound Synchro Indicator: S. SYNC
26. Clock Indicator: CLOCK
27. Remaining Time Indicator: REMAIN
28. Auto Mark Indicator: AUTO MARK
29. Total Time Indicator: TOTAL
30. Timer/Timer Record Indicator



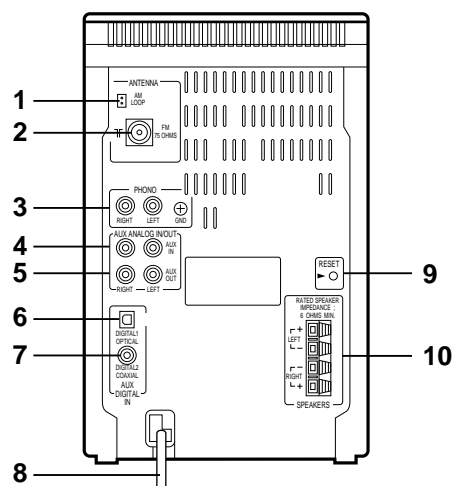
■ Front panel

31. MD Slot
32. On/Stand-by Button: ON/STAND-BY
33. Recording Mode Button: REC MODE
34. CD Track Select Button: TRACK
35. CD ► MD Edit Button
36. Volume Up/Down Buttons:
37. Buttons
38. Tuner Call (Band Select) Button: TUNER(BAND)
39. Auxiliary Select Button: AUX
40. Extra Bass Button: X-BASS
41. Keyboard Input Terminal
42. MD Eject Button:
43. MD Record Button:
44. MD Play/Pause Button:
45. MD Stop Button:
46. Remote Sensor
47. Pre-program Equalizer Button: PRE-EQ
48. CD Stop Button:
49. CD Play/Pause Button:
50. CD Open/Close Button:
51. CD Tray
52. Headphoned Jack: PHONES
53. Input Level Control: INPUT LEVEL

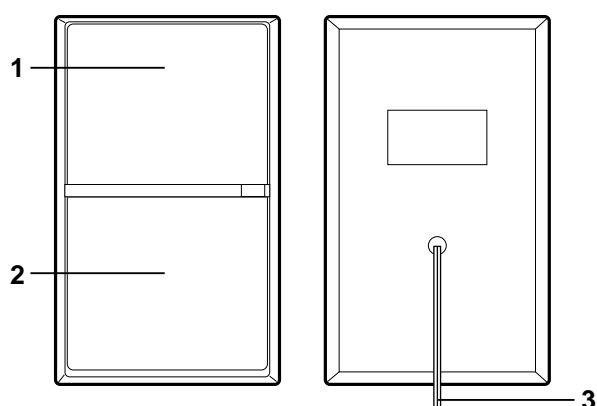


MD-X5H**■ Rear Panel**

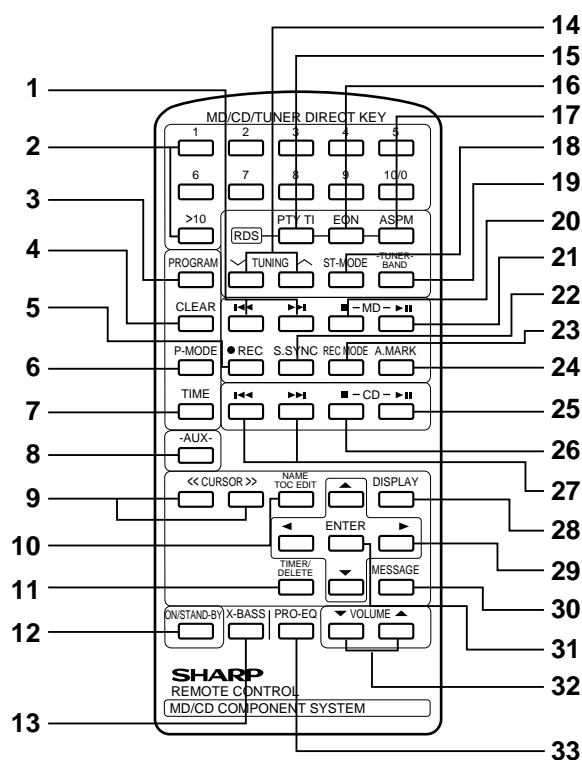
1. AM Loop Aerial Input Socket
2. FM 75 ohms Aerial Socket
3. Phono Input Sockets
4. Auxiliary Analog Input Jacks
5. Auxiliary Analog Output Jacks
6. Auxiliary Digital Input Jack (Optical)
7. Auxiliary Digital Input Jack (Coaxial)
8. AC Power Cord
9. Reset Button
10. Speaker Terminals

**CP-X5H****■ Speaker section**

1. Tweeter
2. Woofer
3. Speaker cord

**MD-X5H****■ Remote Control**

1. MD Track Up/Down, Cue/Review Buttons: ◀◀/▶▶
2. Tuner Preset CD/MDTrack Number InputButtons
3. Program Button: PROGRAM
4. Clear Button: CLEAR
5. MD Record Button: ● REC
6. Play Mode Button: P-MODE
7. Time Display Select Button: TIME
8. Auxiliary Select Button: AUX
9. Cursor Buttons: CURSOR
10. Name/TOC Edit Button: NAME/TOC EDIT
11. Timer/Delete Button: TIMER/DELETE
12. On/Stand-by Button: ON/STAND-BY
13. Extra Bass Button: X-BASS
14. Tuning Up/Down Buttons: ∇/△
15. Programme Type/Traffic Information Search Button: PTY TI
16. EON Button: EON
17. ASPM Button: ASPM
18. FM Stereo Mode Button: ST-MODE
19. Tuner Call (Band Select) Button: TUNER/BAND
20. MD Stop Button: ■
21. MD Play/Pause Button: ▶||
22. Sound Synchro Button: S. SYNC
23. Recording Mode Button: REC MODE
24. Auto Mark Button: A.MARK
25. CD Play/Pause Button: ▶||
26. CD Stop Button: ■
27. CD Track Up/Down, Cue/Review Buttons: ◀◀/▶▶
28. Display Button: DISPLAY
29. ▲▼◀▶ Buttons
30. Message Button: MESSAGE
31. Enter Button: ENTER
32. Volume Up/Down Buttons: ▽/△
33. Pre-programme Equalizer Button: PRE-EQ



When you have set the date and time, this unit can be used as a clock. It can be used for timer recording or for timer playback. It is also used to store the MD recording date in memory.

- 1 Press the ON/STAND-BY button to turn the power on.
- 2 Press the TIMER/DELETE button.
- 3 Within 10 seconds, press the \blacktriangle or \blacktriangledown button to select "TIME ADJUST".
- 4 Within 10 seconds, press the ENTER button.
 - The unit will enter the date setting mode.
- 5 Adjust the day by pressing the \blacktriangle or \blacktriangledown button.
- 6 Press the ENTER button to set the date.
- 7 Adjust the month by pressing the \blacktriangle or \blacktriangledown button.
- 8 Press the ENTER button to set the month.
- 9 Adjust the year by pressing the \blacktriangle or \blacktriangledown button.
 - Press the button once to increase or decrease the year by one. Keep pressing it to advance continuously.
- For a year after 2000, set "00" for 2000, "01" for 2001 and so on.
- 10 Press the ENTER button to set the year.
 - The unit will enter the time setting mode.
- 11 Adjust the hour by pressing the \blacktriangle or \blacktriangledown button.
 - Press the button once to increase or decrease the hour by one. Keep pressing it to advance continuously.
- 12 Press the ENTER button to set the hour.
- 13 Adjust the minute by pressing the \blacktriangle or \blacktriangledown button.
 - Press the button once to increase or decrease the minutes by one. When the button is held down, the time will change in increments of 5 minutes.
- 14 Press the ENTER button to set the minute.
 - The clock will start operating.
 - When about 3 seconds have elapsed, the original display will reappear.

Notes:

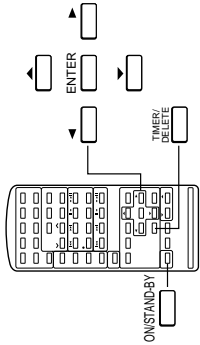
- In the event of a power failure or when the AC power lead is disconnected, the clock display will go out. When the AC power supply is restored, the clock display will flash on and off to indicate the time when the power failure occurred or when the AC power lead was disconnected.
- Whilst recording an MD, you cannot set the date and clock. Be sure to set the date and clock before recording.
- The range of dates that can be entered is from January 1, 1997 to December 31, 2049.

To change the setting:

- Once you have set the date and time, "TIME ADJUST" will not be displayed in step 3. Press the \blacktriangle or \blacktriangledown button to make the date and time appear.
- If you don't need to change the settings, just press the ENTER button.

To check the date and time:

- Press the TIMER/DELETE button, and press the \blacktriangle or \blacktriangledown button until the date and time appear.
- When about 10 seconds have elapsed, the original display will reappear.



2
TIME SET

3
TIME ADJUST

4
01.01.99
CLOCK 000

5
01.01.99

6
01.01.99

7
01.01.99

8
01.01.99

9
01.01.99

10
01.01.99

11
01.01.99

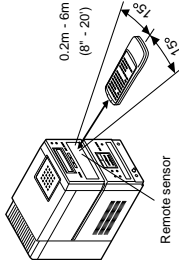
12
01.01.99

13
01.01.99

14
01.01.99
CLOCK 01.0

Notes concerning use:

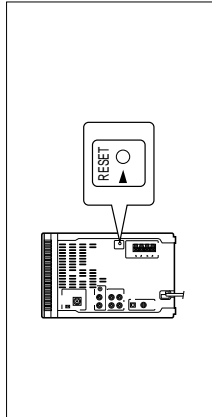
- Replace the batteries if the control distance decreases or operation becomes erratic.
- Periodically clean the transmitter LED on the remote control and the sensor on the main unit with a soft cloth.
- Exposing the sensor on the main unit to strong light may interfere with operation. Change the lighting or the direction of the unit.
- Keep the remote control away from moisture, excessive heat, shock, and vibrations.



MINIDISC SYSTEM LIMITATIONS

Even if the maximum recording time of a MiniDisc is not reached, "DISC FULL" or "TOC FULL" may be displayed.	When the number of tracks used reaches the limit, regardless of the remainder being recording time, further recording will be impossible. (Maximum number of tracks: 255)
Even if the number of tracks and the recording time have not reached the limit, "DISC FULL" may be displayed.	When emphasis information (equalizer treatment in the table section) in a track switches on/off many times, each change is assumed to be the beginning of a new track, which will quickly use up all available track numbers, making further recording impossible, regardless of the remaining time, recording time or the number of tracks on the original.
Even if several short tracks are erased, the remaining recording time may not show an increase.	When the remaining recording time of a disc is displayed, short tracks less than 15 seconds long may not be included in the total.
Two tracks may not be combined in editing.	For MiniDiscs which repeated recording and editing operations were performed, the COMBINE function may not work.
The total of the recorded time and time remaining on a disc may not add up to the maximum possible recording time.	A cluster (about 2 seconds) is normally the minimum unit of recording. So, even if a track is less than 2 seconds long, it will use about 2 seconds of space on the disc. Therefore, the time actually available for recording may be less than the remaining time displayed. If there are scratches on a disc, those sections will be automatically avoided (no recording will be placed in those sections). Therefore, recording time will be reduced.

TROUBLESHOOTING



■ If a problem occurs

If this product is subjected to strong external interference (mechanical shock, excessive static electricity, abnormal supply voltage due to lightning, etc.) or if it is operated incorrectly, it may malfunction or the display may not function correctly. If such a problem occurs, do the following:

- 1 Unplug the AC power lead from the AC socket.
- 2 Press the RESET button on the back of the unit for at least 3 seconds.
- 3 Plug the AC power lead back into the AC socket.
- When the RESET button is pressed, all of the settings in memory will be erased.
- If strange sounds, smells or smoke come out of the unit, or if a foreign object falls into the unit, turn off the power, unplug the AC power lead from the AC socket immediately. Contact the shop where you purchased the unit.

(Continued)

When an error message is displayed, proceed as follows:

Error messages	Meaning	Remedy
BLANK MD	<ul style="list-style-type: none"> Nothing is recorded. (Neither music nor a disc name have been recorded on this MD.) 	<ul style="list-style-type: none"> Replace the disc with a recorded disc.
Can't COPY	<ul style="list-style-type: none"> You tried to record from a disc which you are not allowed to copy. 	<ul style="list-style-type: none"> Replace it with another disc which you can copy from (regular CD).
Can't EDIT	<ul style="list-style-type: none"> A track cannot be edited. 	<ul style="list-style-type: none"> Change the stop position of the track and then try editing it.
Can't REC	<ul style="list-style-type: none"> Recording cannot be performed correctly due to vibration or shock in the unit. 	<ul style="list-style-type: none"> Rerecord or replace it.
DEFECT	<ul style="list-style-type: none"> Since this disc has scratches on it, the recording operation was skipped. 	<ul style="list-style-type: none"> Replace the disc with another recordable disc.
Din UNLOCK	<ul style="list-style-type: none"> Incorrect digital signals are input. 	<ul style="list-style-type: none"> Connect correct digital signals. Use analogue inputs.
DISC ERR*	<ul style="list-style-type: none"> The disc is damaged or there is no TOC on the disc. 	<ul style="list-style-type: none"> Reload the disc or replace it.
DISC FULL	<ul style="list-style-type: none"> The disc is out of recording space. 	<ul style="list-style-type: none"> Replace the disc with another recordable disc.
EDIT OVER	<ul style="list-style-type: none"> There is no space left for recording CD. 	<ul style="list-style-type: none"> Replace it with another recordable disc.
FOCUS ERROR	<ul style="list-style-type: none"> The proper focus cannot be obtained. 	<ul style="list-style-type: none"> Reload the disc.
MD ERROR	<ul style="list-style-type: none"> The unit has determined that it is out of order by performing a self-diagnosis. 	<ul style="list-style-type: none"> Ask the store where you purchased this unit, about repairs.
MECHA ERR*	<ul style="list-style-type: none"> There is a mechanical problem and the disc is not working properly. 	<ul style="list-style-type: none"> Turn off the power, and press the ▲ button.
NAME FULL	<ul style="list-style-type: none"> The number of characters for the disc name or track name exceeds 100. 	<ul style="list-style-type: none"> Shorten the disc or track name.
NO DISC	<ul style="list-style-type: none"> A disc has not been loaded. The disc data cannot be read. 	<ul style="list-style-type: none"> Load a disc. Reload the disc.
NOT AUDIO	<ul style="list-style-type: none"> The data recorded on this disc is not audio data. 	<ul style="list-style-type: none"> Select another track. Replace the disc.
PLAYBACK MD	<ul style="list-style-type: none"> You tried to record on a playback-only disc. 	<ul style="list-style-type: none"> Replace it with a recordable disc.
PROTECT	<ul style="list-style-type: none"> The unit has determined that it is out of order by performing a self-diagnosis. 	<ul style="list-style-type: none"> Turn the power off and back on. If the problem is not resolved, ask the store where you purchased this unit, about repairs.
PROTECTED	<ul style="list-style-type: none"> The disc is write protected. 	<ul style="list-style-type: none"> Move the write protection tab back to its original position.
TEMP OVER	<ul style="list-style-type: none"> The temperature is too high. 	<ul style="list-style-type: none"> Turn off the power, and wait for a while.
TOC ERR*	<ul style="list-style-type: none"> The disc has a large amount of damage. TOC information cannot be read. The MD does not meet the specifications for MDs. 	<ul style="list-style-type: none"> Replace the disc with another disc.
TOC FULL*	<ul style="list-style-type: none"> There is no space left for recording character information (track names, disc names, etc.). 	<ul style="list-style-type: none"> Replace it with another recordable disc.
TOC W ERROR	<ul style="list-style-type: none"> The unit has determined that it is abnormal by performing a self-diagnosis. 	<ul style="list-style-type: none"> Ask the store where you purchased this unit, about repairs.
U TOC ERR*	<ul style="list-style-type: none"> The TOC information on this disc does not meet the MD specifications or it cannot be read. 	<ul style="list-style-type: none"> Replace it with another disc. Erase all the data, and try recording.
U TOC W ERROR	<ul style="list-style-type: none"> The TOC information could not be created properly due to a mechanical shock or to scratches on the disc. 	<ul style="list-style-type: none"> Turn off the power, and try to write the TOC again. (Remove any source of shock or vibration whilst writing.)
? DISC	<ul style="list-style-type: none"> The data contains an error. 	<ul style="list-style-type: none"> Replace the disc with another disc.
0 00:00	<ul style="list-style-type: none"> Music is not recorded. 	<ul style="list-style-type: none"> Replace the disc with a recorded disc.

*: Number or symbol

DISASSEMBLY

Caution on Disassembly

When disassembling the machine or assembling it after repair, observe the following instructions so as to ensure safety and keep its performance.

1. Unload the compact disc, and mini-disc from machine.
2. Be sure to unplug the power cable before starting disassembly of the machine.
3. When disassembling each section, remove the nylon band or wire arrangement.
If a screw of improper length is fit to the MD mechanism (a screw fit the part to the mechanism chassis of MD section), it may contact the optical pickup, impeding normal operation. Hence, due care must be taken.
4. While repairing, pay utmost attention to static electricity on ICs.

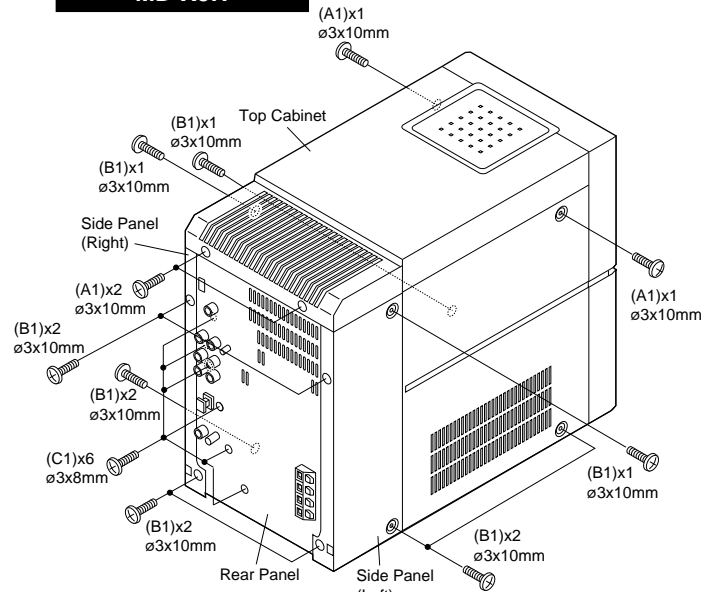
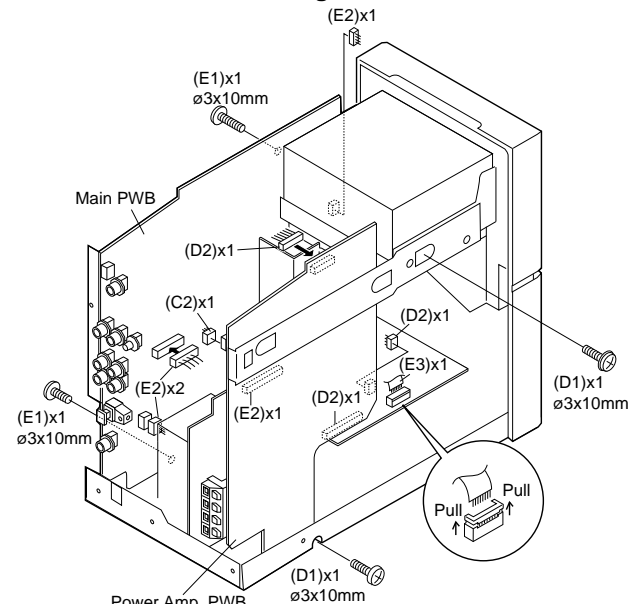
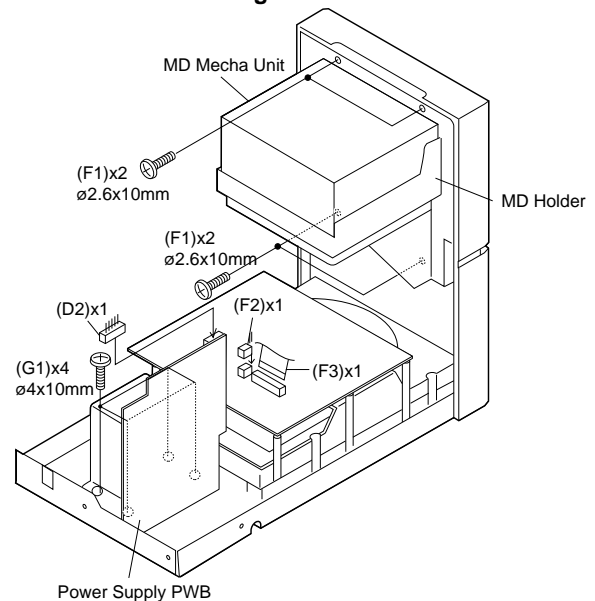
MD-X5H

STEP	REMOVAL	PROCEDURE	FIGURE
1	Top Cabinet	1. Screw (A1) x4	8-1
2	Side Panel (Left/Right)	1. Screw (B1) x10	8-1
3	Rear Panel	1. Screw (C1) x6 2. Socket (C2) x1	8-1 8-2
4	Power Amp. PWB	1. Screw (D1) x2 2. Socket (D2) x4	8-2
5	Main PWB	1. Screw (E1) x2 2. Socket (E2) x4 3. Flat Wire (E3) x1	8-2 8-3
6	MD Holder (MD Unit)	1. Screw (F1) x4 2. Socket (F2) x1 3. Flat Cable (F3) x1	8-3
7	Power Supply PWB	1. Screw (G1) x4	8-3
8	CD Holder (CD Mechanism/ CD Servo PWB)	1. Screw (H1) x4 2. Socket (H2) x1 3. Flat Wire (H3) x1	9-1
9	Front Panel	1. Screw (J1) x2	9-1
10	Display PWB	1. Screw (K1) x10	9-1
11	Jack PWB	1. Screw (L1) x2	9-2
12	CD Servo PWB (Note 1)	1. Screw (M1) x3	9-3
13	CD Mechanism	1. Screw (N1) x3	9-4
14	MD Mecha Unit	1. Screw (P1) x7	9-5
15	MD Main PWB	1. Screw (Q1) x4 2. Socket (Q2) x6	9-6
16	MD Mechanism	1. Screw (R1) x4	10-1

CP-X5H

STEP	REMOVAL	PROCEDURE	FIGURE
1	Front Panel	1. Net..... (A1) x2 3. Screw (A2) x6	10-2~5
2	Speaker	1. Screw (B1) x4	10-6
3	Tweeter	1. Screw (C1) x2	10-6

Note 1: After disconnecting the optical pickup connector wrap the front end of connector in the conductive aluminium foil so as to prevent electrostatic damage of optical pickup.

MD-X5H**Figure 8-1****Figure 8-2****Figure 8-3**

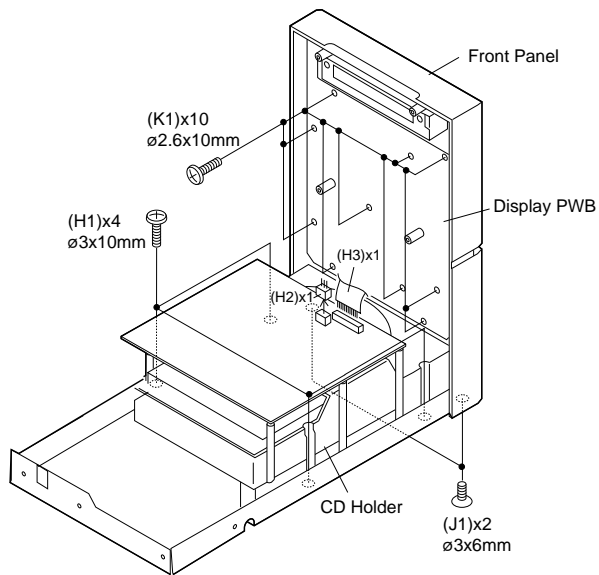


Figure 9-1

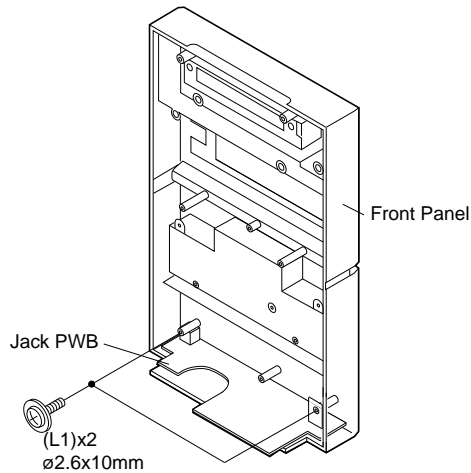


Figure 9-2

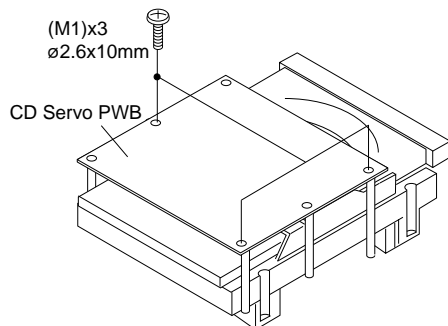


Figure 9-3

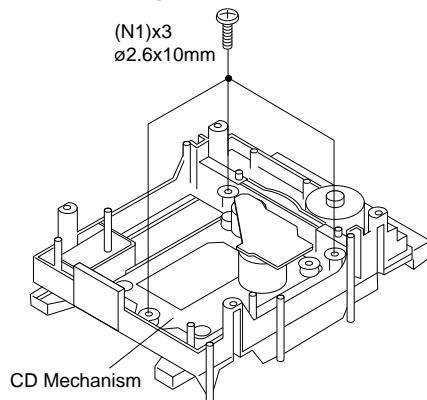


Figure 9-4

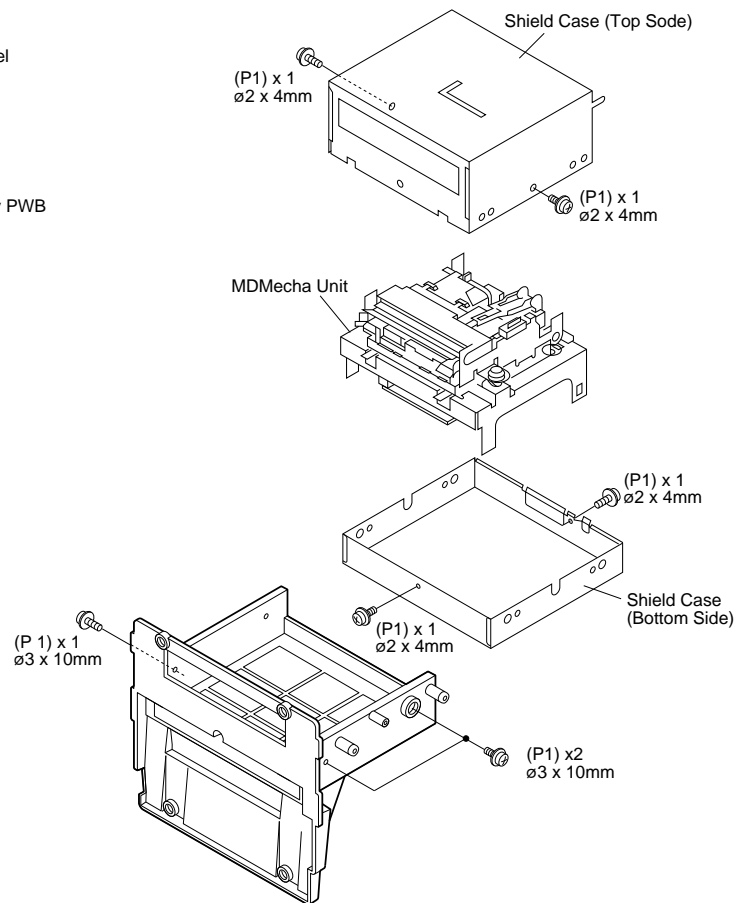


Figure 9-5

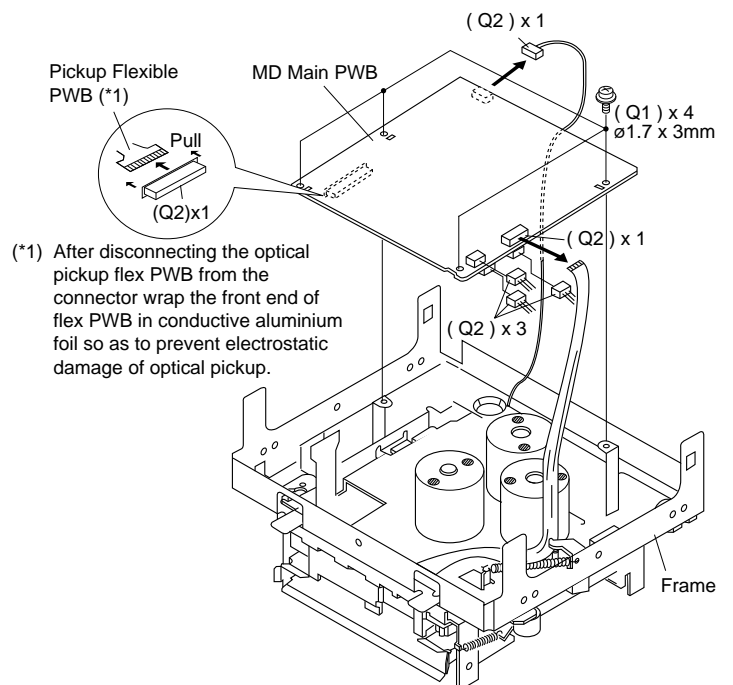


Figure 9-6

MD-X5H/CP-X5H

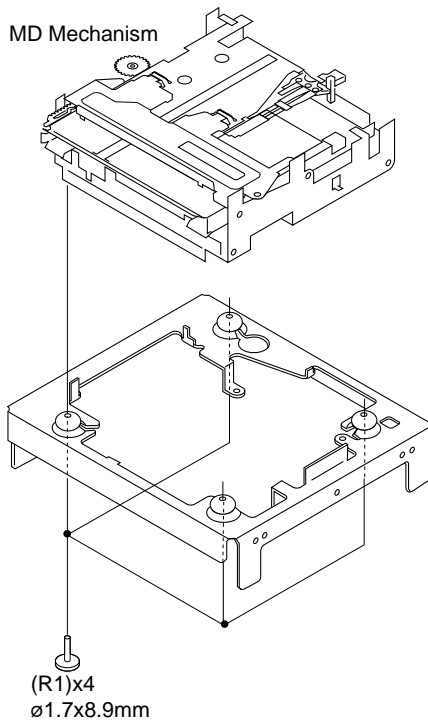


Figure 10-1

CP-X5H

①

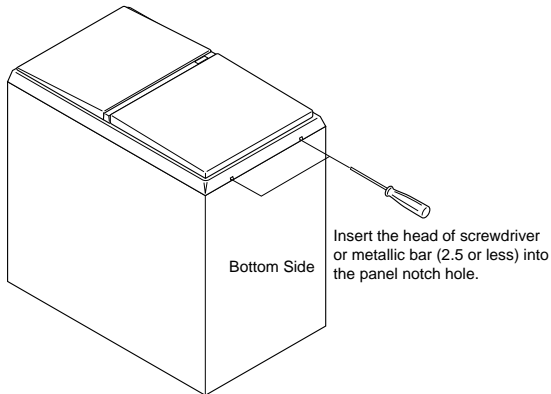
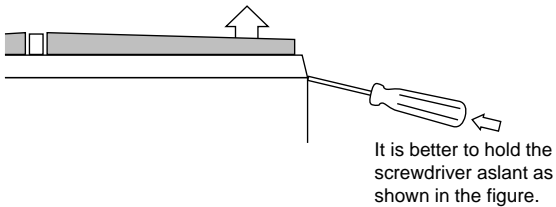


Figure 10-2

- ② Insert the head of screwdriver into the hole, and push further the screwdriver, pulling up the net. Thereby the lower pawl is disengaged



- ③ After disengaging the lower pawl pull slightly in the arrow direction ①, and then pull in the direction ②. Thereby the net can be removed.

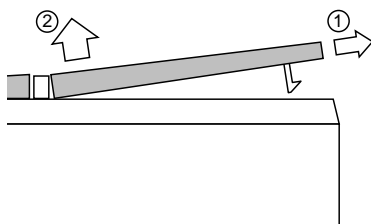
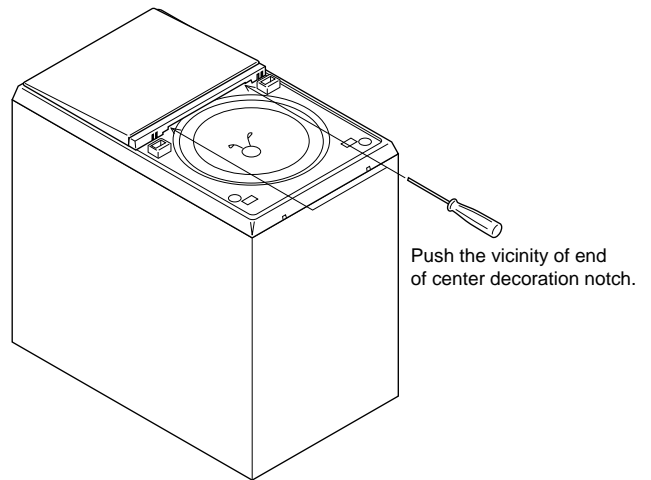


Figure 10-3

④



- ⑤ Insert the head of screwdriver near ④, push further the screwdriver, pulling up the net. Thereby the lower pawl is disengaged (at first disengage at one side and then at other side).
- ⑥ After disengaging both pawls disengage the upper pawl by the same procedure as stated in ③ above.

Figure 10-4

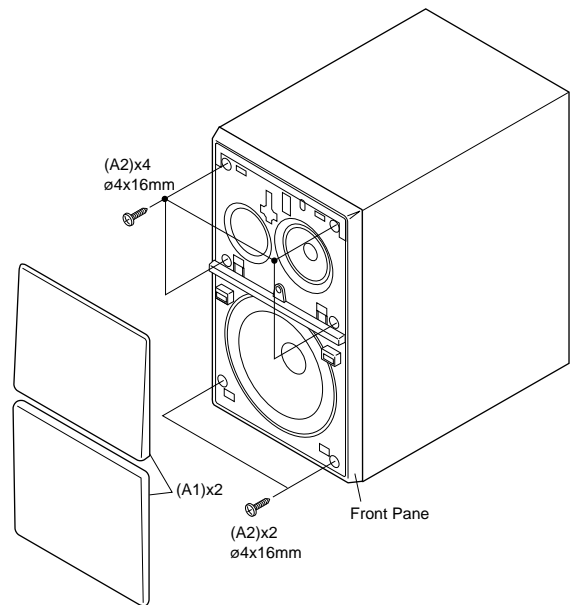


Figure 10-5

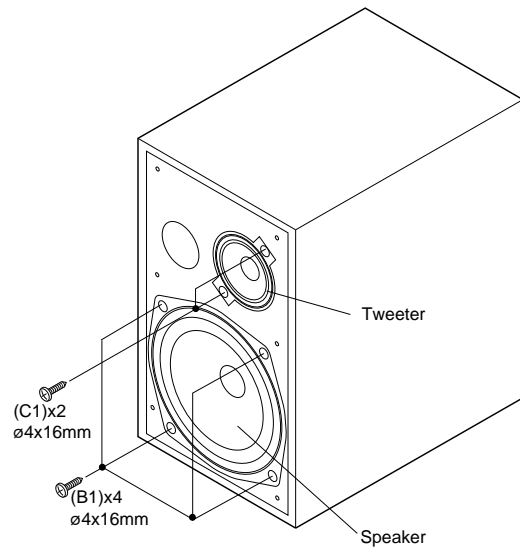


Figure 10-6

REMOVING AND REINSTALLING THE MAIN PARTS

MD MECHANISM SECTION

Perform steps 1 to 3 of the disassembly method to remove the MD mechanism.

How to remove the magnetic head

(See Fig. 11-1)

1. Remove the screws (A1) x 1 pc.

Caution:

Take utmost care so that the magnetic head is not damaged when it is mounted.

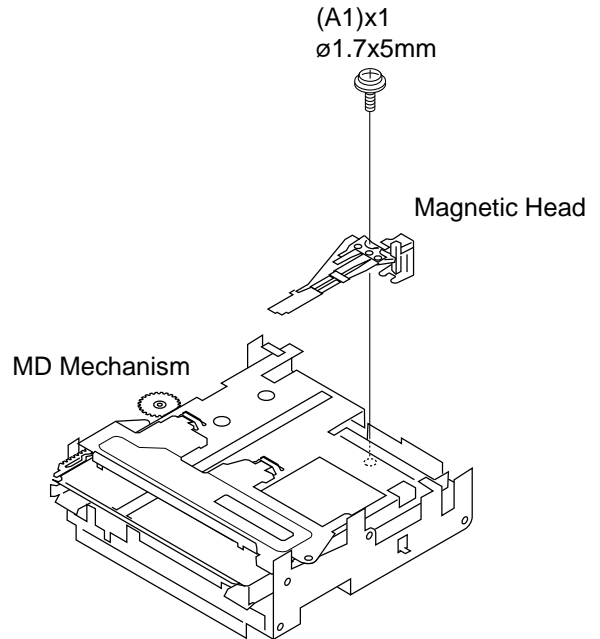


Figure 11-1

How to remove the cartridge holder

(See Fig. 11-2)

1. Open the roller arm lever in the arrow direction, and lower the clamping lever to the rear side.
2. Apply +5V to the red line side of blue connector of loading motor, push the rack gear in the arrow direction to move the cam plate lever until tick is heard.
3. Remove the screw (B1) x1 pc., and the spring (B2) x1 pc., fitted to the holder arm, and shift the cartridge holder to the left side to remove it.

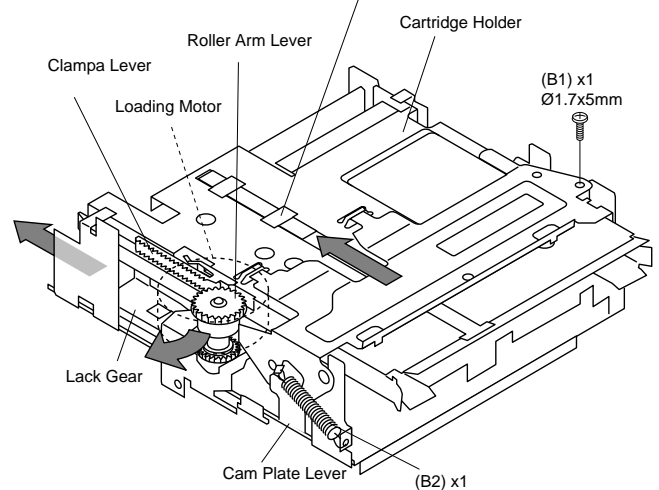


Figure 11-2

How to remove the mechanism switch PWB

(See Fig. 11-3)

1. Remove the screws (C1) x 2 pcs., and remove the mechanism switch PWB.

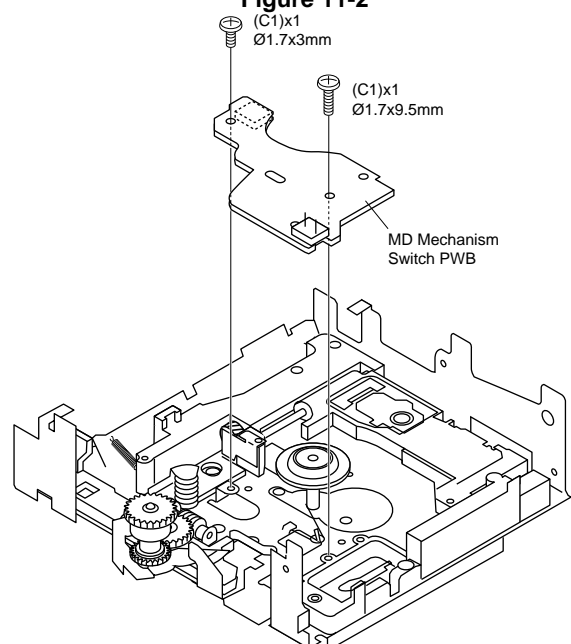


Figure 11-3

MD-X5H/CP-X5H

How to remove the sled motor/loading motor (See Fig. 12-1)

1. Remove the screws (D1) x 1 pcs., and remove the sled motor/loading motor.

Caution:

Be careful so that the gear is not damaged.
(The damaged gear emits noise during searching.)

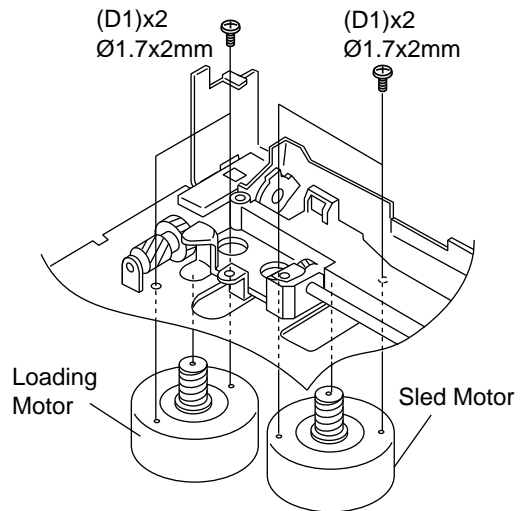


Figure 12-1

How to remove the spindle motor (See Fig. 12-2)

1. Remove the screws (E1) x 3 pcs., and remove the spindle motor.

Caution:

Be careful so that the turntable is not damaged.

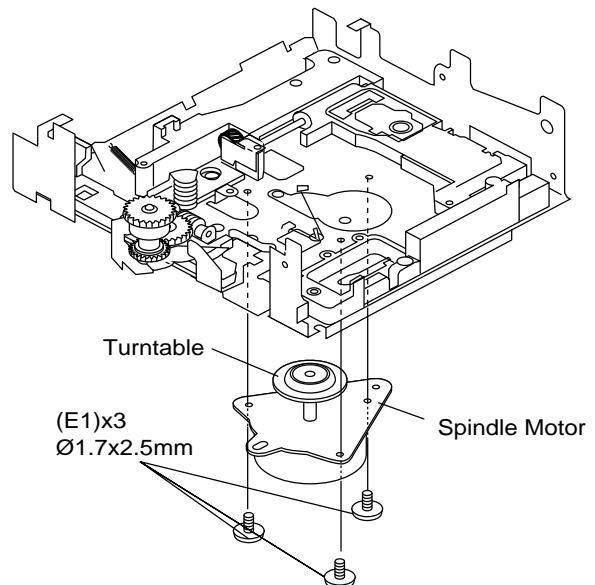


Figure 12-2

How to remove the optical pickup (See Fig. 12-3)

1. Remove the screws (F1) x 3 pcs.

Caution:

Be careful so that the gear is not damaged.
(The damaged gear emits noise during searching.)

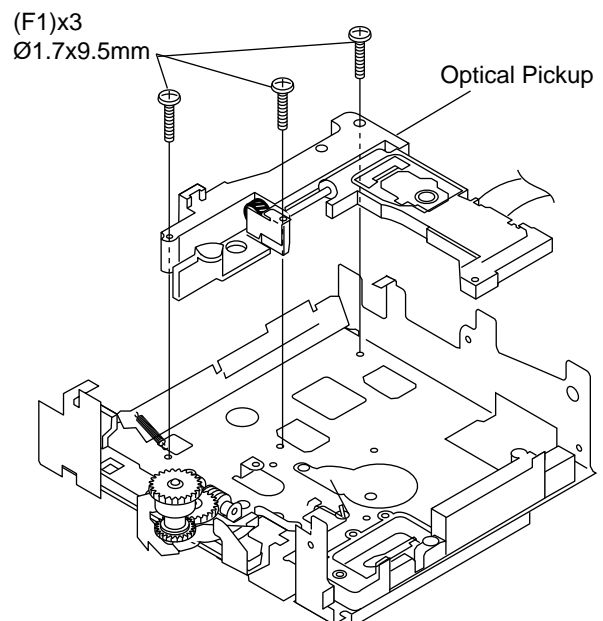


Figure 12-3

CD MECHANISM SECTION

Perform steps 1, to 7 and 12 of the disassembly method to remove the CD mechanism.

How to remove the pickup (See Fig. 13-1)

1. Remove the screw (A1) x 2 pcs., to remove the shaft (A2) x 1 pc.
2. Remove the stop washer (A3) x 1 pc., to remove the gear (A4) x1 pc.
3. Remove the pickup.

Note:

After disconnecting the optical pickup connector wrap the front end of connector in the conductive aluminium foil so as to prevent electrostatic damage of optical pickup.

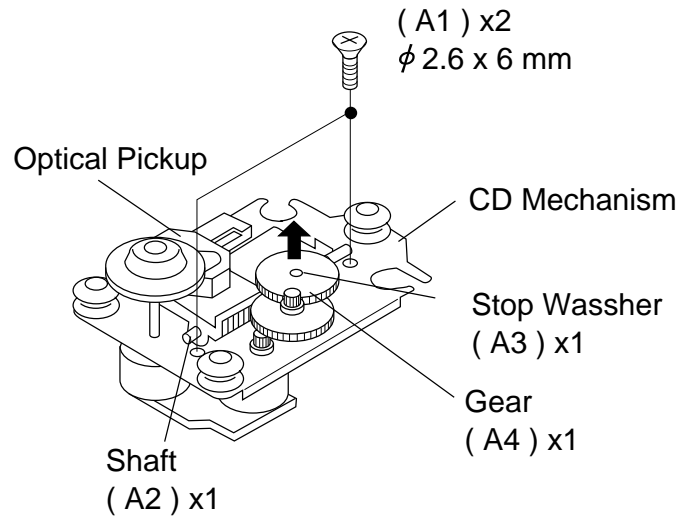


Figure 13-1

How to remove the CD loading motor (See Fig. 13-2)

1. Remove the belt (B1) x 1 pc.
2. Remove the screw (B2) x 2 pcs.
3. Remove the loading motor.

Note:

After disconnecting the optical pickup connector wrap the front end of connector in the conductive aluminium foil so as to prevent electrostatic damage of optical pickup.

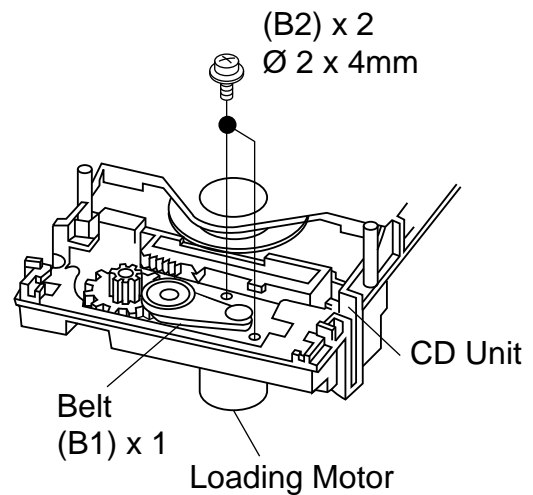


Figure 13-2

ADJUSTMENT

TUNER SECTION

fL: Low-range frequency
fH: High-range frequency

• AM IF/RF

AM Signal oscillator Frequency 400 Hz, 30% modulation

Adjusting item	Adjusting object	Adjusting method
IF	T351 Indication of set must be 1,620 kHz.	IF waveform 450 kHz is set to max.
Frequency cover (Voltage of Pin 20 IC302 VT line)	fL: T302 (522 kHz) Set Display of 522 kHz.	fL: 1.1 ± 0.1 V fH: 5.1 ± 1.3 V of (Only check)
Tracking	fL: T302 (990 kHz)	Set output of speaker terminal to maximum.

• FM Mute Level

FM Signal oscillator Frequency 400 Hz, 22.5 kHz

Adjusting method	Adjusting method	Adjusting object	Adjusting object
98.0 MHz (30 dB)	98.0 MHz	VR351	Input: SO301 Output: Speaker Terminal

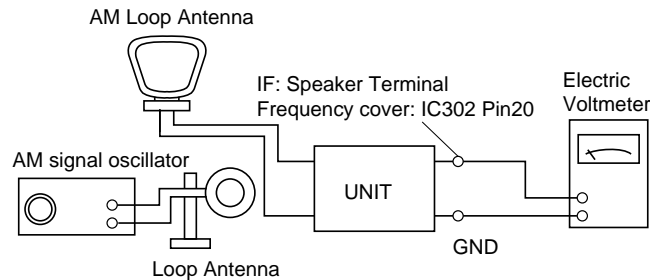


Figure 14-1 AM IF

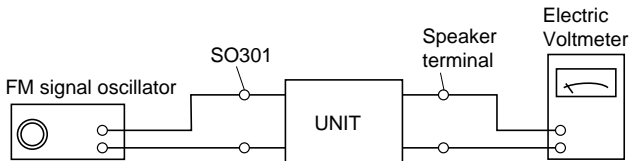


Figure 14-2 FM Mute Level

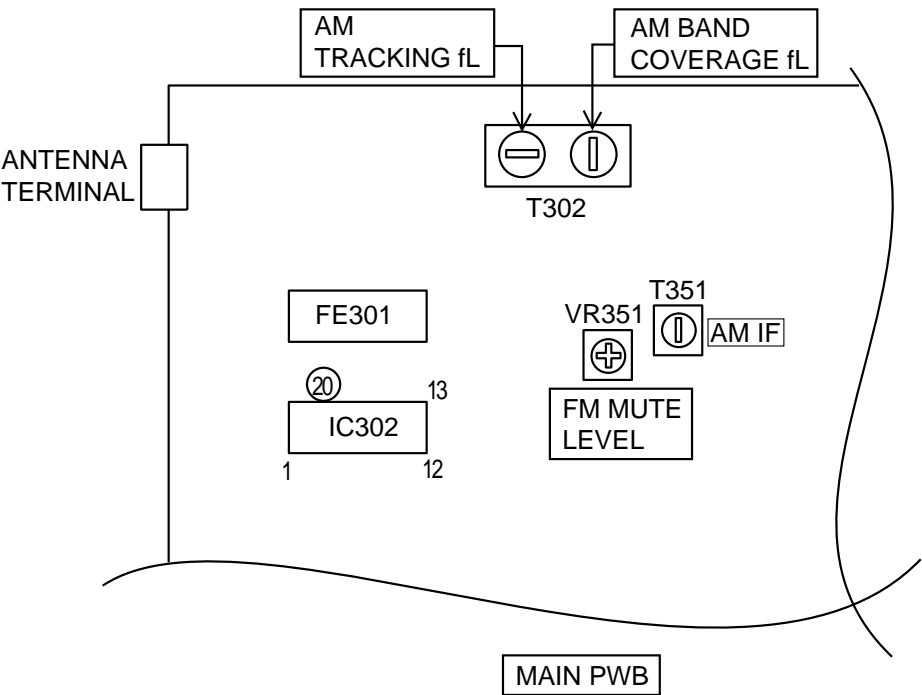


Figure 14-3 ADJUSTMENT POINTS

• Setting the Test Mode

Holding down the PRE-EQ button and TUNER(BAND) button, press the POWER button. Frequency is set in the memory as shown in Table 19. Call it with the PRESET button for tuner circuit adjustment and check.

Preset No.	Frequency	Preset No.	Frequency
P01	87.5 MHz	P06	522 kHz
P02	108.0 MHz	P07	1,620 kHz
P03	90.0 MHz	P08	603 kHz
P04	106.0 MHz	P09	1,404 kHz
P05	98.0 MHz	P10	990 kHz

CD TEST MODE

CD test mode setting

Any TEST mode can be set as shown below by pressing several buttons.
Holding down TACK UP/CUE and CD PLAY/PAUSE, turn on POWER.

Test Mode

Function - CD TEST mode

Test mode setting

CD TEST mode indication

Open/Close operation is \blacktriangle button.

The pickup can be moved with the ($\blacktriangleright\blacktriangleright$) or ($\blacktriangleleft\blacktriangleleft$) button.

<TRACK>

On-spot tracking

Servo OFF playback

<CD>MD EDIT>

On-spot tracking

Servo ON playback

<PLAY> button input - TOC. Initialization is executed, and normal PLAY is executed.

Press the <STOP> button. ——— Stop

If the following button is pressed during PLAY, any track No. can be specified directly.

<TUNER (BAND)> button: Track 4

<AUX> button: Track 9

<X-BASS> button: Track 15

Initialization is not executed.

Note:

The pickup can be moved with the ($\blacktriangleright\blacktriangleright$) or ($\blacktriangleleft\blacktriangleleft$) button only in STOP state.

Cancel method: POWER OFF

CD section

The CD system has the following automatic adjusting function. Therefore readjustment is not required when the pickup is replaced. Since adjustment of this CD unit is not required, the combination of PWB and laser pickup unit is not restricted.

Automatic adjustment items

1. Focus Offset (Fig. 15-1)
2. Tracking Offset (Fig. 15-2)
3. E/F Balance (Tracking Error Balance) (Fig. 15-3)
4. R/F level AGC function (HF level: Constant)
5. Tracking gain RF level automatic follow-up

This adjustment is executed whenever the disc is changed. Therefore the optimum setting is used for playback of each disc.

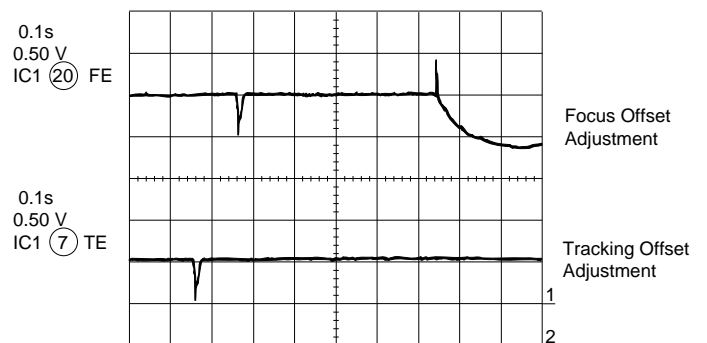


Figure 15-1

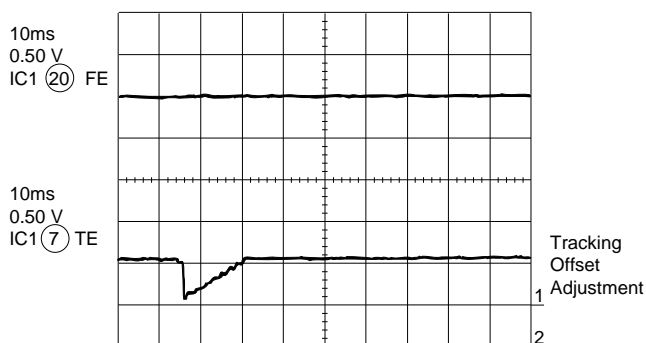


Figure 15-2

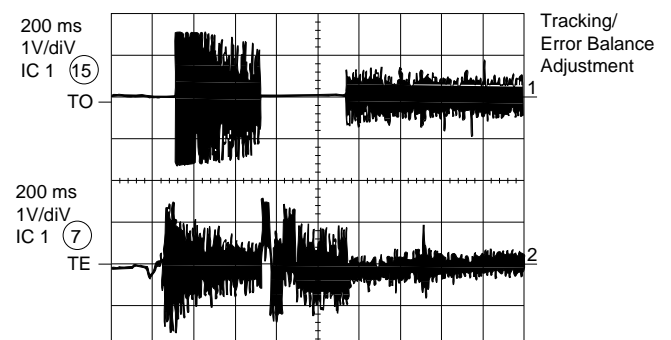
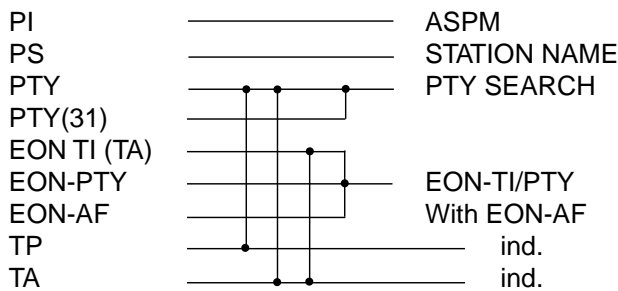


Figure 15-3

MD-X5H/CP-X5H

RDS

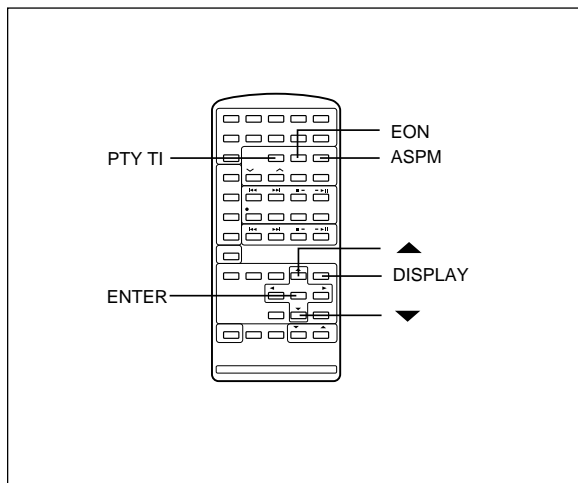
1. RDS Function



Select and search (18 kind items) by cyclic
NEWS-AFFAIRS ----- OTHER M - ALARM - TP - TA

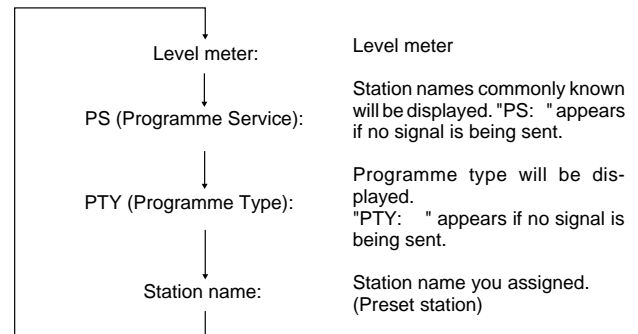
Select and stand-by (17 kind items) by cyclic
NEWS-AFFAIRS ----- OTHER M - ALARM - TI

2. DISPLAY and control buttons



Information Provided by RDS

With the MD-X5H, you can watch two types of RDS service. To show them on the display, press the DISPLAY button. Each time you press the DISPLAY button, the display will change to show the following information.



Descriptions of the PTY (Programme Type) codes, TP (Traffic Programme) and TA (Traffic Announcement)
With the MD-X5H, you can search for and receive the following PTY, TP and TA signals.

News:	News
Affairs:	Topical programme expanding on the current news or affairs
Info:	Programmes on medical service, weather forecast, etc.
Sport:	Sports events
Educate:	Educational programmes
Drama:	Radio plays
Culture:	Programmes on national or regional culture
Science:	Programmes on national sciences and technology
Varied:	Other programmes like comedies or ceremonies

Pop M:	Pop music
Rock M:	Rock music
M.o.R. M:	Middle-of-the-road music (usually called "easy listening")
Light M:	Light music
Classics:	Classics
Other M:	Other music
Alarm:	Emergency broadcasts
NONE:	No programme type (receive only)
TP:	Broadcasts which carry traffic announcements
TA:	Traffic announcements are being broadcast at present.

Note:

- When the unit is in the EON stand-by mode and a programme is selected, the unit will display "TI" instead of "TP" or "TA".

Note:

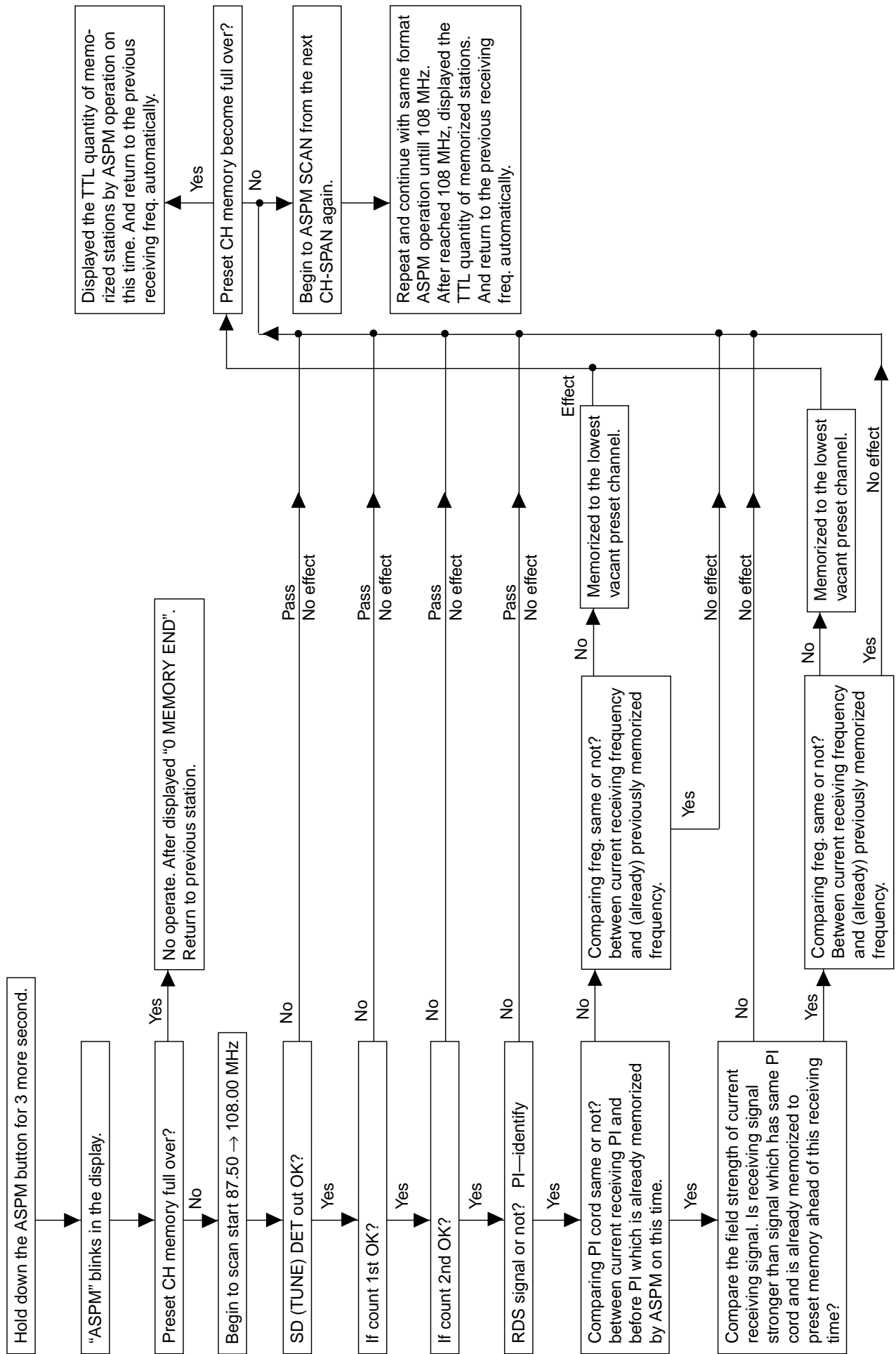
TP and TA ind. are different from CD-C75H.

TP, TA ind. can light up individually, when TP: OFF and TA: ON, it means that EON-TI can be used, in case of TP=OFF, TA=OFF, EON-TI can't be used.

In case of CD-C75H, (TP: OFF and TA: ON) disregard (ignore) this case, because EON-TI is nothing.

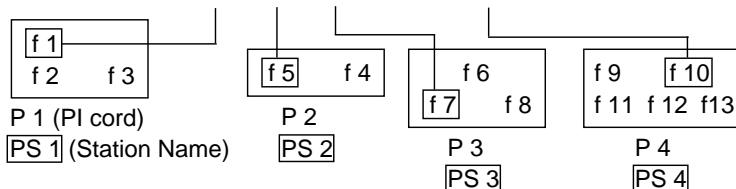
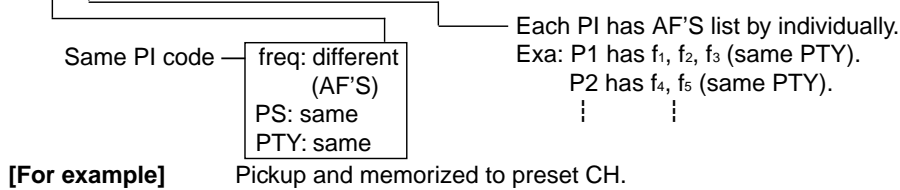
AF: Alternative Frequencies

ASPM, summary operation



MD-X5H/CP-X5H

- ASPM SCAN: 87.50MHz → 108.00 MHz.
- Only RDS signal is memorized by ASPM because RDS signal has PI code and is suitable and convenient for ASPM operation.
ASPM
Comparing field strength, only one strongest RDS station is memorized of all stations (repeater relay stations) that have same PI code.



Select signals (f1, f5, f7, f10) are memorized in the preset memory by ASPM.

- If tentative - ASPM operation is repeated intentionally, never memorized (over write) at the same frequency.
1st time ASPM → strongest stations of each pi are memorized.

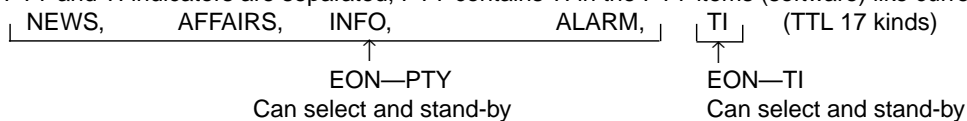
ASPM is not only very usefull for PTY search, but also EON operation.
2nd time ASPM → 2nd strong stations of each pi are memorized and so on.
PTY search function is equal to FM band search function as a result.

1. Introduction of RDS for MD-X5H

MD-X5H RDS function is equal to adding EON feature to the current CD-C75H RDS.

EON feature is EON—PTY and EON—TI.

Although PTY and TI indicators are separated, PTY contains TI in the PTY items (software) like current PTY search items.



EON—PTY and EON—TI are basically stand-by → receive the desired program of ON station.

2. The difference point from current CD-C75H RDS. (CD-C75H — MD-X5H)

1. PTY item: added TA.TTL 18 kind.
2. Each "TP", "TA" ind. light up or go out individually.
"TA" ind. doesn't light up on current model, CD-C75H due to none EON—TI.
3. Added 3 indicators(in FL) due to adding EON feature.
EON: Lights up only during receiving EON data (14A).
TI: During EON-TI stand-by → Light up
During receiving ON station. → blink.
PTY: During EON-PTY stanb-by → Light up
During receiving ON station. → blink.
4. No adjust type (None adjusting circuit.)
5. Added EON button.
6. Need to change RDS logo due to add EON feature.
7. Added EON—TI, EON—PTY function.

3. Summary of MD-X5H RDS—EON operation

EON—PTY: Select and set the desired "PTY" → stand-by → switch to ON(other network) Station at the start of desired PTY automatically → stay and listen to PTY of ON station → switch back to TN(This net) station automatically at the end of PTY(ON) i.e. after changing to another PTY(except AFFAIRS) or cancelling to receive PTY of ON station midway.

EON—TI: Select and set the "TI" → stand-by → switch to ON station at the start of traffic announcement automatically → stay and listen to TA of ON station → switch back to TN station automatically at the end of TA(ON). ie after TA(ON) is over or cancelled to receive TA of ON station midway.
When switching TN → ON station.

In case of exist 2 more stations having the desired(specified) "PTY" or "TI", the receiver will select and switch to ON station comparing field strength at the same time. But when the frequency of ON station exists in the preset-memory, then reciver switches straight to that ON station(CH), without comparing field strength so can make a quick switching from TN—ON station. Preset memory takes priority of switching TN—ON station.

therefore ASPM is usefull not only for PTY search but also for rapid EON switching. Anyway MD-X5H's EON is basically stand-by and receiving method, along with the Guidelines for EON implementation.

EON summary notice for reference

1. EON-TI/PTY EON stand-by can be set, only when EON ind. lights up.
While EON ind. goes out (NO EON STATION), EON stand-by can't be set.
If the EON button is pressed, then "NO EON" is indication the display.
2. EON-TI/PTY Even if switch back ON→TN station continue to keep EON stand-by.
3. EON-TI Don't switch TN→ON during TN broadcast TA. (same item)
4. EON-TI/PTY EON can be cancelled during receiving ON station by pressing EON button if necessary and switch back ON→TN.
5. EON-TI/PTY EON stand-by is perfectly cancelled (cleared) by pressing EON button 2 times during stand-by or powerOFF or Tun Up/Down or change band or recall pre-set CH.
6. EON-TI/PTY After setting EON stand-by, stand-by items can be confirmed by pressing EON button one time.
7. EON-TI/PTY EON button function:
 - EON setting
 - Confirm stand-by items
 - Cancel (ON→TN)
 - EON clear cancel (2 times)
8. EON-TI/PTY After setting EON-TI and EON-PTY stand-by, if when EON data is not transmitted, EON ind goes out and EON stand-by is automatically cancelled display "NO EON".
9. EON-TI EON-TI stand-by can't be set. When TP=0,TA=0(TN) even if EON ind. lights up and the EON button is pressed then "NO TI" is indication the display.
10. EON-PTY Don't switch TN→ON during TN broadcast same specified PTY. (same item of PTY)
11. EON-TI/PTY Switch TN→ON→ TN station one cycle.
Never switch TN→ON1→ON2→ Other net to other net station.
12. EON-TI/PTY After switch TN→ON station. When ON station is NO RDS, NO signal, TA=OFF or different PTY items. The receiver switch back ON→TN displaying "NO READY".
13. During receive ON station. when ON station become to be NO RDS, NO signal, TA=ON to OFF or different PTY item, The receiver switch back ON→TN.
14. EON-TI/PTY Switch TN→ON in case of 2 more stations exist, comparing field strength and switch to the strongest station, if these signals are same strength, switch to the first previous station.
If same frequency as AF'S exists in the preset memory, then switch TN→ON (preset memory station) straight.
In case of exist 2 more preset memories of AF'S, then switch to the preset CH which taken in EON DATA first, also in this case no concern to field strength.
15. Even if switch TN→ON preset memory straight, that ON station is very weak signal, then search another AF'S (ON) station comparing field strength and switch to the strongest station as a result. Of all stations of AF'S are very weak or no good condition, then, switch back ON→TN automatically display "NO READY".
16. EON-TI/PTY No linkage volume, power ON/OFF, and switch function.

Traffic Programme code (TP)	Traffic Announcement code (TA)	Applications
OFF	OFF	This programme does not carry traffic announcements nor does it refer, via EON, to a programme that does.
OFF	ON	This programme carries EON information about another programme which gives traffic information.
ON	OFF	This programme carries traffic announcements but none are being broadcast at present and may also carry EON information about other traffic announcements.
ON	ON	A traffic announcement is being broadcast on this programme at present.

MD-X5H/CP-X5H

MD SECTION

• Note

Remove the MD unit for repair, and after installing it in the set, be sure to reset it and ascertain that reset has been done.

Resetting procedure (1) Unplug the AC cord from the socket, and hold down the RESET button provided at the rear side for more than 10 seconds.

(2) Once set the TEST MODE (holding down the TEST MODE (X-BASS button) and **⏮** button together, press the POWER button), and then turn off power.

1. Preparation for adjustment

Test disc

	Type	Test disc	Part No.
1	High reflection disc	TGYS1 (SONY)	RRCDT0101AFZZ
2	Low reflection disc	Recording minidisc	UDSKM0001AFZZ
3	—————	Head Adjusting transparent	RRCDT0103AFZZ

Extension Cable (See Fig. 30-4)

	Type	Part No.
1	Extension PWB for servicing	RUNTK0457AFZZ
2	Extension Connector (2 Pin)	QCNWK0059AFZZ
3	Extension Connector (6 Pin)	QCNWK0107AFZZ
4	Extension Cable (5 Pin)	QCNWK0109AFZZ
3	Extension Cable (28 Pin)	QCNWK0108AFZZ

2. Test mode

Test mode setting method

1. Holding down the **▶▶** **⏮** button and MD **▶▶** **⏮** (PLAY/PAUSE) button, press the POWER button.

(State ① is changed to state ②.)

2. Insert the playback disc 1 (high reflection disc) or recording disc 2 (low reflection disc). (State ③ is set.)

Thus, the test mode state is set.

① tsm ○○○○e○○ : TEST MODE
TEST STOP state

② EJECT
TEST

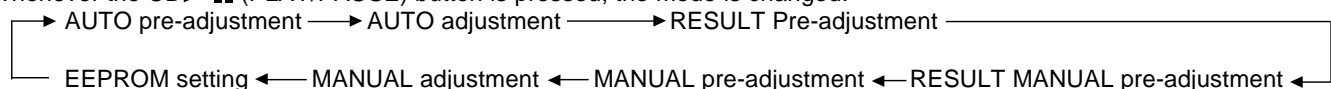
③ AUT YOB
TEST

○○ represents version of MD microcomputer.

(When the MD **■** (STOP) button is pressed in the ③ state, the indication ① is restored. To restore ③ again, press the CD **▶▶** **⏮** (PLAY/ PAUSE) button.)

Entering the specific mode

Whenever the CD **▶▶** **⏮** (PLAY/PAUSE) button is pressed, the mode is changed.



• Canceling the test mode

When the POWER button is pressed, the test mode is canceled, and the POWER OFF state is set.

• Test Mode

1. AUTO pre-adjustment mode	<ul style="list-style-type: none"> Automatic pre-adjustment is performed. (After adjustment the grating adjustment mode is set.) The adjustment value is output with the aid of system controller interface.
2. AUTO adjustment mode	<ul style="list-style-type: none"> Automatic adjustment is performed. The adjustment value is output with the aid of system controller interface. Continuous playback is performed. (Error rate indication, jump test)
3. RESULT sub-mode	<ul style="list-style-type: none"> The measurement value, set value and calculated value are indicated. The set value is changed manually (in servo OFF state).
4. RESULT mode (final adjustment)	<ul style="list-style-type: none"> The set value (after calculation) is indicated. The set value is changed manually (in servo OFF state).
5. MANUAL pre-adjustment mode	<ul style="list-style-type: none"> RF side manual adjustment is performed. Focus and tracking signal ATT manual adjustment is performed. Focus and tracking signal offset setting is performed.
6. MANUAL adjustment mode	<ul style="list-style-type: none"> Focus and tracking signal ATT manual adjustment is performed.
7. EEPROM setting mode	<ul style="list-style-type: none"> Various coefficients of digital servo are changed manually. Each servo is set to ON individually. Temperature detection terminal voltage is measured, and the reference value is determined.
8. TEST-PLAY mode	<ul style="list-style-type: none"> Continuous playback from the specified address is performed. C1 error rate measurement, ADIP error rate measurement.
9. TEST-REC mode	<ul style="list-style-type: none"> Continuous recording from the specified address is performed. Change of record laser output (servo gain is also changed according to laser output)
10. INNER mode	<ul style="list-style-type: none"> The position where the INNER switch is turned on is measured.
11. EJECT mode	<ul style="list-style-type: none"> TEMP setting (of EEPROM setting) CONTROL setting (of EEPROM setting) Setting of laser power (record/playback power)

1. AUTO pre-adjustment mode (Low reflection disc only)

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m○○○○ e ○○]
Step 2	Press once the CD PLAY button.	AUTO pre-adjustment menu	[_ A U T _ Y O B I _]
Step 3	Press once the MD PLAY button. End of adjustment	<p>The slide moves to the innermost periphery, and automatic pre-adjustment is started.</p> <ul style="list-style-type: none"> During automatic adjustment *** changes as follows. HAo→RFg→SAg→SBg→PTG→PCH→GTG→GCH→RCG→SEG→RFG→SAG→HAO→HEO→TCO→LAO <p>If adjustment is OK, Step 4. If adjustment is NG, Step 5.</p>	[*** : _ _ _ _ _]
Step 4	Grating adjustment, adjustment value output Press once the MD STOP button.	STEP 2	[_ C O M P L E T E _]
Step 5	Adjustment value output Press once the MD STOP button.	STEP 2 AUTO pre-adjustment menu	[C a n ' t _ A D J .]

• *** : Adjustment name, □□□□ : Address

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2. AUTO adjustment mode

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m○○○○ e○○]
Step 2	Press the CD PLAY button two times.	AUTO adjustment menu	[A U T O _ A J S T _]
Step 3	Press once the MD PLAY button. End of adjustment	The slide moves to the innermost periphery, and automatic adjustment is started. • In case of high reflection disc *** changes as follows. PEG→HAG • In case of low reflection disc *** changes as follows. PEG→LAG→GCG→GEG→LAG If adjustment is OK, Step 4. If adjustment is NG, Step 7.	[*** : _ _ _ _ _]
Step 4	Adjustment value output Press the MD PLAY button. Press the MD STOP button.	STEP 5 STEP 2	[_ C O M P L E T E _]
Step 5	Continuous playback (pit section) Continuous playback (groove section)		[s□□□□c○○○○] [a□□□□c○○○○]
Step 6	Press the CD STOP button. Press the MD STOP button.	Continuous playback (groove section) STEP 2 AUTO adjustment menu	[a□□□□a○○○○]
Step 7	Adjustment value output Press the MD STOP button.	STEP 2 AUTO adjustment menu	[C a n ' t _ A D J .]

• *** : Adjustment name, ○○ : Measurement value, □□□□ : Address

3. RESULT sub-mode

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m○○○○ e○○]
Step 2	Press the CD PLAY button three times.	RESULT sub-menu	[_ R S T _ Y O B I _]
Step 3	Press once the MD PLAY button.	Indication of measurement value	[R F G : _ ○○ _ ●]
Step 4	Press once the CD PLAY button.	Indication of measurement value	[R C G : _ ○○ _ ●]
Step 5	Press once the CD PLAY button.	Indication of measurement value	[R T G : _ _ _ _ ●]
Step 6	Press once the CD PLAY button.	Indication of measurement value	[G T G : _ _ _ _ ●]
Step 7	Press once the CD PLAY button.	Indication of measurement value	[P C H : _ _ _ _ ●●]
Step 8	Press once the CD PLAY button.	Indication of measurement value	[G C H : _ _ _ _ ●●]
Step 9	Press once the CD PLAY button.	Indication of measurement value	[S A G : _ _ _ ●●●]
Step 10	Press once the CD PLAY button.	Indication of measurement value	[S B G : _ _ _ ●●●]
Step 11	Press once the CD PLAY button.	Indication of measurement value	[S E G : _ _ _ ●●●]
Step 12	Press once the CD PLAY button.	Indication of measurement value	[S F G : _ _ _ ●●●]
Step 13	Press once the CD PLAY button.	Indication of measurement value	[H A O : ○○○ _ _ _]
Step 14	Press once the CD PLAY button.	Indication of measurement value	[H B O : ○○○ _ _ _]
Step 15	Press once the CD PLAY button.	Indication of measurement value	[H E O : ○○○ _ _ _]
Step 16	Press once the CD PLAY button.	Indication of measurement value	[H F O : ○○○ _ _ _]
Step 17	Press once the CD PLAY button.	Indication of measurement value	[L A O : ○○○ _ _ _]
Step 18	Press once the CD PLAY button.	Indication of measurement value	[L B O : ○○○ _ _ _]
Step 19	Press once the CD PLAY button.	Indication of measurement value	[L E O : ○○○ _ _ _]
Step 20	Press once the CD PLAY button.	Indication of measurement value	[L F O : ○○○ _ _ _]
Step 21	Press once the CD PLAY button.	Indication of measurement value	[T C O : _ ○○ _ _ _]
Step 22	Press once the CD PLAY button.	Indication of adjustment error sequence No.	[Y O B : _ □□ _ _ _]
Step 23	Press once the CD PLAY button.	Indication of adjustment status	[D I F : _ □□ _ _ _]
Step 24	Press once the CD PLAY button.	Indication of pre-adjustment not completed (00)/completed (4B)	[A D J : _ □□ _ _ _]
Step 25	Press once the MD PLAY button.	RESULT sub-menu state	[_ R S T _ Y O B I _]

• ○○ : Measurement value, ●● : Adjustment value, □□ : Other various informations

• Pressing the REC button causes reversing.

• If the VOL UP button is pressed while the set value is indicated, the set value increases, and the new set value is stored in RAM.

• If the VOL DOWN button is pressed while the set value is indicated, the set value reduces, and the new set value is stored in RAM.

• If the VOL UP/VOL DOWN button is held down, the set value changes continuously with 100 ms cycle.

• The digit of increase/decrease by the VOL UP/VOL DOWN button can be shifted with the aid of CD STOP button.

3. RESULT mode (final adjustment)

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m○○○○ e○○]
Step 2	Press the CD PLAY button four times.	RESULT menu	[_ R E S U L T _ _ _]
Step 3	Press once the MD PLAY button.	Indication of set value	[H A G : _ _ _ ●●●]
Step 4	Press once the CD PLAY button.	Indication of set value	[H B G : _ _ _ ●●●]
Step 5	Press once the CD PLAY button.	Indication of set value	[L A G : _ _ _ ●●●]
Step 6	Press once the CD PLAY button.	Indication of set value	[L B G : _ _ _ ●●●]
Step 7	Press once the CD PLAY button.	Indication of set value	[P E G : _ _ _ ●●●]
Step 8	Press once the CD PLAY button.	Indication of set value	[P F G : _ _ _ ●●●]
Step 9	Press once the CD PLAY button.	Indication of set value	[G E G : _ _ _ ●●●]
Step 10	Press once the CD PLAY button.	Indication of set value	[G F G : _ _ _ ●●●]
Step 11	Press once the CD PLAY button.	Indication of set value	[G C G : _ _ _ ●●]
Step 12	Press once the MD STOP button.	RESULT menu state	[_ R E S U L T _ _ _]

- : Measurement value
- Pressing the REC button causes reversing.
- If the VOL UP button is pressed while the set value is indicated, the set value increases, and the new set value is stored in RAM.
- If the VOL DOWN button is pressed while the set value is indicated, the set value reduces, and the new set value is stored in RAM.
- If the VOL UP/VOL DOWN button is held down, the set value changes continuously with 100 ms cycle.
- The digit of increase/decrease by the VOL UP/VOL DOWN button can be shifted with the aid of CD STOP button.

5. MANUAL auxiliary adjustment mode (only low reflection disc)

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m○○○○ e○○]
Step 2	Press the CD PLAY button five times.	MANUAL auxiliary adjustment mode	[_ M N U _ Y O B I _]
Step 3	Press once the MD PLAY button.	Initial setting → Temperature measuring mode	[T M P : _ △△ _ _ _]
Step 4	Press once the CD PLAY button.	Offset "0" setting → A signal offset tentative measurement	[H A o : △△△ _ _ _]
Step 5	Press once the CD PLAY button.	B signal offset tentative measurement	[H B o : △△△ _ _ _]
Step 6	Press once the CD PLAY button.	E signal offset tentative measurement	[H E o : △△△ _ _ _]
Step 7	Press once the CD PLAY button.	F signal offset tentative measurement	[H F o : △△△ _ _ _]
Step 8	Press once the CD PLAY button.	Offset tentative measurement → Laser ON	[L O N : _ _ _ _ _]
Step 9	Press once the CD PLAY button.	Innermost periphery move → RF side FG rough adjustment	[R F g : △△△ _ _ ●]
Step 10	Press once the CD PLAY button.	Focus ATT (A signal) tentative setting	[S A g : △△△○○○]
Step 11	Press once the CD PLAY button.	Focus ATT (B signal) tentative setting	[S B g : △△△○○○]
Step 12	Press once the CD PLAY button.	RF side pit section TG adjustment	[P T G : △△△ _ _ ●]
Step 13	Press once the CD PLAY button.	Pit section COUT level setting	[P C H : △△△ _ ○○]
Step 14	Press once the CD PLAY button.	Outer periphery move → RF side groove TG adjustment	[G T G : △△△ _ _ ●]
Step 15	Press once the CD PLAY button.	Groove section COUT level setting	[G C H : △△△ _ ○○]
Step 16	Press once the CD PLAY button.	RF side TCRS adjustment	[R C G : △△△ _ _ ●]
Step 17	Press once the CD PLAY button.	Tracking ATT (E signal) setting	[S E G : △△△○○○]
Step 18	Press once the CD PLAY button.	Tracking ATT (F signal) setting	[S F G : △△△○○○]
Step 19	Press once the CD PLAY button.	Indication of tracking EFMIO measurement	[g M I : △△△ _ _ _]
Step 20	Press once the CD PLAY button.	RF side pit section FG adjustment	[R F G : △△△ _ _ ●]
Step 21	Press once the CD PLAY button.	Focus ATT (A signal) setting	[S A g : △△△○○○]
Step 22	Press once the CD PLAY button.	Focus ATT (B signal) setting	[S B g : △△△○○○]
Step 23	Press once the CD PLAY button.	Offset "0" setting → A signal offset measurement	[H A o : △△△ _ _ _]
Step 24	Press once the CD PLAY button.	B signal offset measurement	[H B o : △△△ _ _ _]
Step 25	Press once the CD PLAY button.	E signal offset measurement	[H E o : △△△ _ _ _]
Step 26	Press once the CD PLAY button.	F signal offset measurement	[H F o : △△△ _ _ _]
Step 27	Press once the CD PLAY button.	TCRS signal offset measurement	[T C O : △△△ _ _ _]
Step 28	Press once the CD PLAY button.	A signal offset measurement	[L A O : △△△ _ _ _]
Step 29	Press once the CD PLAY button.	B signal offset measurement	[L B O : △△△ _ _ _]
Step 30	Press once the CD PLAY button.	E signal offset measurement	[L E O : △△△ _ _ _]
Step 31	Press once the CD PLAY button.	F signal offset measurement	[L F O : △△△ _ _ _]

- △△△ : Measurement value, ● : Set value, ○○○ : Account value

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- If the VOL UP/VOL DOWN button is pressed during setting indication, the setting increases/decreases, and the new setting is stored in RAM.
- If the VOL UP/VOL DOWN button is held down, the setting changes continuously with 100 ms cycle.
- If the REC button is pressed, the setting returns step by step excepting the following case.
 A signal offset (HAO) → Offset tentative setting → RF side FG adjustment (RFG)
 RF side TCRS adjustment (RCG) → RF side groove TG adjustment (GTG)
 RF side groove TG adjustment (GTG) → Innermost periphery move → RF side pit section adjustment (PTG)
 RF side pit TG adjustment (PTG) → RF side FG rough adjustment (RFG) → Laser lighting (LON)
 Laser lighting (LON) → Offset "0" setting → A signal offset tentative measurement (HAo)
 If the measurement value is within the OK range, "※" appears on the 8th character.

6. MANUAL adjustment mode

High reflection disc

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m○○○○ e ○○]
Step 2	Press the CD PLAY button six times.	MANUAL adjustment menu	[_ M N U _ A J S T _]
Step 3	Press once the MD PLAY button.	Initial setting → Temperature measuring mode	[T M P : _ △△ _ _ _]
Step 4	Press once the CD PLAY button.	Laser ON	[L O N : _ _ _ _ _]
Step 5	Press once the CD PLAY button.	Innermost periphery move → Tracking ATT (E signal) setting	[P E G : △△△○○○]
Step 6	Press once the CD PLAY button.	Tracking ATT (F signal) setting	[P F G : △△△○○○]
Step 7	Press once the CD PLAY button.	Indication of tracking EFMIO measurement	[P M I : △△△ _ _ _]
Step 8	Press once the CD PLAY button.	Focus ATT (A signal) setting	[H A G : △△△○○○]
Step 9	Press once the CD PLAY button.	Focus ATT (B signal) setting	[H B G : △△△○○○]

- If the MD STOP button is pressed while the MANUAL adjustment menu is displayed, the state is changed to the TEST mode STOP state.
- If the REC button is pressed, the setting returns step.

Low reflection disc

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m○○○○ e ○○]
Step 2	Press the CD PLAY button six times.	MANUAL adjustment menu	[_ M N U _ A J S T _]
Step 3	Press once the MD PLAY button.	Initial setting → Temperature measuring mode	[T M P : _ △△ _ _ _]
Step 4	Press once the CD PLAY button.	Laser ON	[L O N : _ _ _ _ _]
Step 5	Press once the CD PLAY button.	Innermost periphery move → Tracking ATT (E signal) setting	[P E G : △△△○○○]
Step 6	Press once the CD PLAY button.	Tracking ATT (F signal) setting	[P F G : △△△○○○]
Step 7	Press once the CD PLAY button.	Indication of tracking EFMIO measurement (pit section)	[P M I : △△△ _ _ _]
Step 8	Press once the CD PLAY button.	Focus ATT (A signal) setting	[L A g : △△△○○○]
Step 9	Press once the CD PLAY button.	Focus ATT (B signal) setting	[L B g : △△△○○○]
Step 10	Press once the CD PLAY button.	Outside periphery move → Track cross setting	[G C G : △△△○○○]
Step 11	Press once the CD PLAY button.	Tracking ATT (E signal) setting	[G E G : △△△○○○]
Step 12	Press once the CD PLAY button.	Tracking ATT (F signal) setting	[P F G : △△△○○○]
Step 13	Press once the CD PLAY button.	Indication of tracking EFMIO measurement (groove section)	[G M I : △△△ _ _ _]
Step 14	Press once the CD PLAY button.	Focus ATT (A signal) setting	[L A G : △△△○○○]
Step 15	Press once the CD PLAY button.	Focus ATT (B signal) setting	[L B G : △△△○○○]

- If the MD STOP button is pressed while the MANUAL adjustment menu is displayed, the state is changed to the TEST mode STOP state.
- If the REC button is pressed, the setting returns step by step excepting the following case.
 Track cross ATT setting (GTG) → Innermost periphery move → Focus ATT (B signal) setting (LBg)

7. EEPROM setting mode

a) Focus setting

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m○○○○ e ○○]
Step 2	Press the CD PLAY button seventimes.	EEPROM setting menu	[E E P R O M _ S E T]
Step 3	Press once the MD PLAY button.	Focus setting menu	[_ _ F o c u s _ _ _]
Step 4	Press once the MD PLAY button.	Focus system loop filter gain constant setting	[F G _ _ _ _ _ ◆◆]
Step 5	Press once the CD PLAY button.	Focus system loop filter f characteristic constant 1 setting	[F F 1 _ _ _ _ ◆◆]
Step 6	Press once the CD PLAY button.	Focus system loop filter f characteristic constant 2 setting	[F F 2 _ _ _ _ ◆◆]
Step 7	Press once the CD PLAY button.	FZC oscillation histerisis level setting a	[F Z H L E V _ _ ◆◆]
Step 8	Press once the CD PLAY button.	Comparison level setting (normal) in case of FOK generation	[F O K L E V n _ ◆◆]

Step No.	Setting Method	Remarks	Display
Step 9	Press once the CD PLAY button.	Comparison level setting in case of FOK generation (when focus is "ON")	[F O K L E V f _ ◆◆]
Step 10	Press once the CD PLAY button.	LPF coefficient setting (normal) in case of FOK generation	[F O K L P F n _ ◆◆]
Step 11	Press once the CD PLAY button.	LPF coefficient setting in case of FOK generation (when focus is "ON")	[F O K L P F f _ ◆◆]
Step 12	Press once the CD PLAY button.	Waiting time setting in case of auto-focus retraction	[W A I T f _ _ _ ◆◆]

- ◆◆ : Setting value
- Pressing the REC button causes reversing.
- If the VOL UP button is pressed while the specific setting item is indicated, the setting increases, and the new setting is set in LSI.
- If the VOL DOWN button is pressed while the specific setting item is indicated, the setting decreases, and the new setting is set in LSI.
- If the VOL UP/VOL DOWN button is held down, the setting changes continuously with 100 ms cycle.

b) Spindle setting

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m ○ ○ ○ ○ e ○ ○]
Step 2	Press the CD PLAY button seven times.	EEPROM setting menu	[E E P R O M _ S E T]
Step 3	Press once the MD PLAY button.	Focus setting menu	[_ _ F o c u s _ _]
Step 4	Press once the CD PLAY button.	Spindle setting menu	[_ S p i n d l e _ _]
Step 5	Press once the MD PLAY button.	Spindle system loop filter gain constant setting (Until tracking servo ON)	[S P G _ _ _ _ _ ◆◆]
Step 6	Press once the CD PLAY button.	Spindle system loop filter gain constant setting (After tracking servo ON, inner periphery)	[S P G _ i n _ _ ◆◆]
Step 7	Press once the CD PLAY button.	Spindle system loop filter gain constant setting (After tracking servo ON, center)	[S P G _ m i d _ _ ◆◆]
Step 8	Press once the CD PLAY button.	Spindle system loop filter gain constant setting (After tracking servo ON, outside periphery)	[S P G _ o u t _ _ ◆◆]
Step 9	Press once the CD PLAY button.	Spindle system loop filter f characteristic constant 1 setting	[S P 1 _ _ _ _ _ ◆◆]
Step 10	Press once the CD PLAY button.	Spindle system loop filter f characteristic constant 2 setting	[S P 2 _ _ _ _ _ ◆◆]
Step 11	Press once the CD PLAY button.	Spindle system loop filter f characteristic constant 3 setting	[S P 3 _ _ _ _ _ ◆◆]
Step 12	Press once the CD PLAY button.	Spindle system loop filter f characteristic constant 4 setting	[S P 4 _ _ _ _ _ ◆◆]
Step 13	Press once the CD PLAY button.	Spindle system loop filter f characteristic constant 5 setting	[S P 5 _ _ _ _ _ ◆◆]
Step 14	Press once the CD PLAY button.	Spindle drive output limiter setting	[S P D L I M _ _ ◆◆]

- ◆◆ : Setting value
- Pressing the REC button causes reversing.
- If the VOL UP button is pressed while the specific setting item is indicated, the setting increases, and the new setting is set in LSI.
- If the VOL DOWN button is pressed while the specific setting item is indicated, the setting decreases, and the new setting is set in LSI.
- If the VOL UP/VOL DOWN button is held down, the setting changes continuously with 100 ms cycle.

c) Tracking setting

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m ○ ○ ○ ○ e ○ ○]
Step 2	Press the CD PLAY button seven times.	EEPROM setting menu	[E E P R O M _ S E T]
Step 3	Press once the MD PLAY button.	Focus setting menu	[_ _ F o c u s _ _]
Step 4	Press the CD PLAY button two times.	Tracking setting menu	[_ T r a c k i n g _]
Step 5	Press once the MD PLAY button.	Tracking system loop filter gain constant setting	[T G _ _ _ _ _ ◆◆]
Step 6	Press once the CD PLAY button.	Spindle system loop filter f characteristic constant 1 setting	[T F 1 _ _ _ _ _ ◆◆]
Step 7	Press once the CD PLAY button.	Spindle system loop filter f characteristic constant 2 setting	[T F 2 _ _ _ _ _ ◆◆]
Step 8	Press once the CD PLAY button.	Setting of tracking system servo mode 4	[S V C N T 4 _ _ ◆◆]
Step 9	Press once the CD PLAY button.	Tracking deceleration pulse level setting (for one line jump)	[T R B L V 0 _ _ ◆◆]
Step 10	Press once the CD PLAY button.	Tracking deceleration pulse level setting (for 10 line jump)	[T R B L V t _ _ ◆◆]
Step 11	Press once the CD PLAY button.	Tracking kick pulse level setting (for one line jump)	[T R K L V 0 _ _ ◆◆]
Step 12	Press once the CD PLAY button.	Tracking kick pulse level setting (for 10 line jump)	[T R K L V t _ _ ◆◆]
Step 13	Press once the CD PLAY button.	Tracking drive pulse width setting (for one line jump)	[T D P W o _ _ _ ◆◆]
Step 14	Press once the CD PLAY button.	Tracking drive pulse width setting (for 10 line jump)	[T D P W t _ _ ◆◆]
Step 15	Press once the CD PLAY button.	Tracking slip stop time setting (for one line jump)	[S L C T 0 _ _ _ ◆◆]
Step 16	Press once the CD PLAY button.	Tracking slip stop time setting (for 10 line jump)	[S L C T t _ _ _ ◆◆]
Step 17	Press once the CD PLAY button.	Tracking slip stop time setting (move)	[S L C T m _ _ ◆◆]

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Step No.	Setting Method	Remarks	Display
Step 18	Press once the CD PLAY button.	TCRS comparison level 1 for high reflection	[T C R S C 1 P _ ◆◆]
Step 19	Press once the CD PLAY button.	Comparison level in case of COUT generation (playback)	[C O T L V p _ _ ◆◆]
Step 20	Press once the CD PLAY button.	Comparison level in case of COUT generation (record)	[C O T L V r _ _ ◆◆]
Step 21	Press once the CD PLAY button.	Auto-move waiting time setting	[W A I T m _ _ ◆◆]

- ◆◆ : Setting value
- Pressing the REC button causes reversing.
- If the VOL UP button is pressed while the specific setting item is indicated, the setting increases, and the new setting is set in LSI.
- If the VOL DOWN button is pressed while the specific setting item is indicated, the setting decreases, and the new setting is set in LSI.
- If the VOL UP/VOL DOWN button is held down, the setting changes continuously with 100 ms cycle.

d) Slide setting

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m ○ ○ ○ ○ e ○ ○]
Step 2	Press the CD PLAY button seven times	EEPROM setting menu	[E E P R O M _ S E T]
Step 3	Press once the MD PLAY button.	Focus setting menu	[_ _ F o c u s _ _]
Step 4	Press the CD PLAY button three times.	Slide setting menu	[_ _ _ S l e d _ _]
Step 5	Press once the MD PLAY button.	Slide system loop filter gain constant setting	[S L G _ _ _ _ ◆◆]
Step 6	Press once the CD PLAY button.	Slide system loop filter f characteristic constant 2 setting	[S L 2 _ _ _ _ ◆◆]
Step 7	Press once the CD PLAY button.	Slide output limiter setting	[S L D L I M _ _ ◆◆]
Step 8	Press once the CD PLAY button.	Slide servo output dead zone level setting	[S L D L E V _ _ ◆◆]
Step 9	Press once the CD PLAY button.	Slide kick pulse level setting (forced move)	[S L K L V k _ _ ◆◆]
Step 10	Press once the CD PLAY button.	Slide kick pulse level setting (for 10 lines jump auxiliary use)	[S L K L V t _ _ ◆◆]
Step 11	Press once the CD PLAY button.	Slide kick pulse level setting (move)	[S L K L V m _ _ ◆◆]

- ◆◆ : Setting value
- Pressing the REC button causes reversing.
- If the VOL UP button is pressed while the specific setting item is indicated, the setting increases, and the new setting is set in LSI.
- If the VOL DOWN button is pressed while the specific setting item is indicated, the setting decreases, and the new setting is set in LSI.
- If the VOL UP/VOL DOWN button is held down, the setting changes continuously with 100 ms cycle.

Temperature measurement value correction table

Ambient temperature	correction
12.2 °C ~ 15.8 °C	-0 3 H
15.9 °C ~ 19.6 °C	-0 2 H
19.7 °C ~ 23.2 °C	-0 1 H
23.2 °C ~ 26.8 °C	± 0 H
26.9 °C ~ 30.7 °C	+0 1 H
30.8 °C ~ 34.3 °C	+0 2 H
34.4 °C ~ 37.9 °C	+0 3 H

EEPROM record value = Microcomputer measurement value +
Correction

* EEPROM record value

Value to be measured by the microcomputer at +25°C

* Microcomputer measurement value

Value to be measured by the microcomputer at specific temperature

* Correction value

Correction value for conversion to measurement value at +25°C (see the table shown left)

• Temperature code check

The temperature code is read after automatic adjustment. If it is within the range shown below, the adjustment is OK.

Ambient temperature	temperature code
19.6 °C ~ 30.7 °C	0 6
8.7 °C ~ 19.6 °C	0 7

e) TEMP setting

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m 〇〇〇〇 e 〇〇]
Step 2	Press the CD PLAY button seven times.	EEPROM setting menu	[E E P R O M _ S E T]
Step 3	Press once the MD PLAY button.	Focus setting menu	[_ _ F o c u s _ _ _]
Step 4	Press the CD PLAY button four times.	TEMP setting menu	[_ _ _ T e m p _ _ _]
Step 5	Press once the MD PLAY button.	TEMP reference value setting	[T E M P _ 〇〇 _ ◆◆]

Step No.	Setting Method	Remarks	Display
Step 1	EJECT state (or mechanism-less state)		[_ _ E J E C T _ _ _]
Step 2	Press the CD ► MD EDIT button.	TEMP reference value setting	[T E M P _ 〇〇 _ ◆◆]

- ◆◆ : Setting value, 〇〇 : Measurement value
- If the VOL UP button is pressed while the specific setting item is indicated, the setting increases, and the new setting is set in LSI.
- If the VOL DOWN button is pressed while the specific setting item is indicated, the setting decreases, and the new setting is set in LSI.
- If the VOL UP/VOL DOWN button is held down, the setting changes continuously with 100 ms cycle.

f) CONTROL setting

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m 〇〇〇〇 e 〇〇]
Step 2	Press the CD PLAY button seven times.	EEPROM setting menu	[E E P R O M _ S E T]
Step 3	Press once the MD PLAY button.	Focus setting menu	[_ _ F o c u s _ _ _]
Step 4	Press the CD PLAY button five times.	CONTROL setting menu	[_ C o n t r o l _ _]
Step 5	Press once the MD PLAY button.	CONTROL 1 setting	[C O N T R L 1 _ ◆◆]
Step 6	Press once the CD PLAY button.	CONTROL 2 setting	[C O N T R L 2 _ ◆◆]
Step 7	Press once the CD PLAY button.	Setting of spin kick level in MOVE state	[S P K L E V m _ ◆◆]
Step 8	Press once the CD PLAY button.	Setting of readjustment interval time (minutes)	[A D J T T M _ ◆◆]
Step 9	Press once the CD PLAY button.	Setting of equalizer coefficients A and D (high reflection)	[H D E Q A D _ ◆◆]
Step 10	Press once the CD PLAY button.	Setting of equalizer coefficients A and D (low reflection pit)	[L D E Q A D _ ◆◆]
Step 11	Press once the CD PLAY button.	Setting of equalizer coefficients A and D (low reflection groove)	[G D E Q A D _ ◆◆]
Step 12	Press once the CD PLAY button.	Setting of equalizer coefficients B and C (high reflection)	[H D E Q B C _ ◆◆]
Step 13	Press once the CD PLAY button.	Setting of equalizer coefficients B and C (low reflection pit)	[L D E Q B C _ ◆◆]
Step 14	Press once the CD PLAY button.	Setting of equalizer coefficients B and C (low reflection groove)	[G D E Q B C _ ◆◆]
Step 15	Press once the CD PLAY button.	Setting of autolevel slicer gain (high reflection)	[H A L S G _ _ ◆◆]
Step 16	Press once the CD PLAY button.	Setting of autolevel slicer gain (low reflection pit)	[L A L S G _ _ ◆◆]
Step 17	Press once the CD PLAY button.	Setting of autolevel slicer gain (low reflection groove)	[G A L S G _ _ ◆◆]
Step 18	Press once the CD PLAY button.	Setting of autolevel slicer offset (high reflection)	[H A L S O F _ _ ◆◆]
Step 19	Press once the CD PLAY button.	Setting of autolevel slicer offset (low reflection pit)	[L A L S O F S _ _ ◆◆]
Step 20	Press once the CD PLAY button.	Setting of autolevel slicer offset (low reflection groove)	[G A L S O F S _ _ ◆◆]

Step No.	Setting Method	Remarks	Display
Step 1	EJECT state (or mechanism-less state)		[_ _ E J E C T _ _ _]
Step 2	Press the TRACK EDIT button.	CONTROL 1 setting	[C O N T R L 1 _ ◆◆]
Step 3	Press once the CD PLAY button.	CONTROL 2 setting	[C O N T R L 2 _ ◆◆]

- ◆◆ : Setting value
- If the VOL UP button is pressed while the specific setting item is indicated, the setting increases, and the new setting is set in LSI.
- If the VOL DOWN button is pressed while the specific setting item is indicated, the setting decreases, and the new setting is set in LSI.
- If the VOL UP/VOL DOWN button is held down, the setting changes continuously with 100 ms cycle.
- CONTROL 1
 - Pit 7 : High frequency superposition ON/OFF in record mode (0:OFF, 1:ON)
 - Pit 6~4 : Play start SD number (30 to 100 sector, 10 sector step)
 - Pit 2~0 : High speed jump over-run (384 to 830 lines, 64 lines step)
- CONTROL 2
 - Pit 4~0 : EEPROM version (a~)

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8. TEST-PLAY mode

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m○○○○ e ○○]
Step 2	Press the CD▶ MD EDIT button.	TEST-PLAY menu	[T E S T _ P L A Y _]
Step 3	Press once the CD STOP button. Press once the MD PLAY button.	ADRES setting (Target address initial value is indicated) While searching, set the search output to "H". To start continuous play, return it to "L".	[A D R E S _ 0 0 5 0]
Step 4	Continuous playback (pit section) Continuous playback (groove section)	(Address + C1 error indication) (Address + C1 error indication)	[s □□□□ c ○○○○] [a □□□□ c ○○○○]
Step 5	Press once the CD STOP button. Continuous playback (groove section)	(Address + ADIP error indication)	[a □□□□ a ○○○○]
Step 6	Press once the MD STOP button.	TEST-PLAY menu	[T E S T _ P L A Y _]

- If the MD STOP button is pressed while the TEST-PLAY menu is displayed, TEST mode STOP state is set.
 - If the MD PLAY button is pressed while the TEST-PLAY menu is displayed, continuous playback is started from the current pickup position.
 - Whenever the CD▶ MD EDIT button is pressed in the address setting mode, the address changes as follows.
0 0 5 0 → 0 3 C 0 → 0 7 0 0 → 0 8 A 0 → 0 0 5 0 →
 - Whenever the CD STOP button is pressed in the address setting mode, the digit which is changed with - I◀◀ / ▶▶I + changes as follows.
0 0 5 0 → 0 0 5 0 → 0 0 5 0 → 0 0 5 0 →
 - The digit of address which has been specified with - I◀◀ / ▶▶I + and CD STOP button in the address setting mode is set to +01H/-01H.(0~F)
* If the - I◀◀ / ▶▶I + button is held down, the setting changes continuously with 100 ms cycle.
 - If the TRACK EDIT button is pressed in the continuous playback mode, the number of jump lines changes as follows.
1 line → 10 line → 400 line → 1 line →
* After the number of jump lines is indicated for one second, the address indication is restored. [▲▲▲T R _ J U M P]
 - If the - I◀◀ / ▶▶I + button is pressed in the continuous playback mode, the specified number of lines is jumped in the FWD/REV direction.
* If the - I◀◀ / ▶▶I + button is held down, the setting changes with 100 ms cycle.
 - Whenever the CD STOP button is pressed in the continuous playback mode, the indication changes as follows.

* Pit section	Continuous playback (SUBQ address indication + C1 error indication) remains.	[s □□□□ c ○○○○]
* Groove section	Continuous playback (ADIP address indication + C1 error indication) remains.	[a □□□□ c ○○○○]
	↓	
	Continuous playback (ADIP address indication + ADIP error indication) remains.	[a □□□□ a ○○○○]
	↓	
	Continuous playback (ADIP address indication + C1 error indication) remains.	[a □□□□ c ○○○○]
	⋮	
- □□□□ : Address, ○○○○ : Error late, ▲▲▲ : Jump lines

9. TEST-REC mode

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m○○○○ e ○○]
Step 2	Press the CD▶ MD EDIT button.	TEST-REC menu	[T E S T _ R E C _ _]
Step 3	Press once CD STOP button.	ADRES setting (indication of address initial value)	[a 0 0 5 0 _ p w ▽▽]
Step 4	Press once the MD PLAY button.	While searching, set the search output to "H". To start continuous play, return it to "L". Continuous recording	[a □□□□ p w ▽▽]
Step 5	Press once the MD STOP button.	TEST-REC menu	[T E S T _ R E C _ _]

- If the MD STOP button is pressed while the TEST-PLAY menu is displayed, TEST mode STOP state is set.
- If the MD PLAY button is pressed while the TEST-REC menu is displayed, continuous record is started from the current pickup position.
- Whenever the CD▶ MD EDIT button is pressed in the address setting mode, the address changes as follows.
0 0 5 0 → 0 3 C 0 → 0 7 0 0 → 0 8 A 0 → 0 0 5 0 →
- Whenever the CD STOP button is pressed in the address setting mode, the digit which is changed with - I◀◀ / ▶▶I + changes as follows.
0 0 5 0 → 0 0 5 0 → 0 0 5 0 → 0 0 5 0 →
- The digit of address which has been specified with - I◀◀ / ▶▶I + and CD STOP button in the address setting mode is set to +01H/-01H.(0~F)
* If the - I◀◀ / ▶▶I + button is held down, the setting changes continuously with 100 ms cycle.
- If the VOL UP/VOL DOWN button is pressed in TEST-REC mode and continuous record mode, the laser record power changes.
(Servo gain changes also according to the record power.)
- □□□□ : Address, ▽▽ : Laser power cord

10. INNER mode

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m 0 0 0 0 e 0 0]
Step 2	Press the TRACK EDIT button.	INNER menu	[_ _ I N N E R _ _]
Step 3	Press once the MD PLAY button.	INNER switch position measurement (SUBQ address and C1 error are also indicated.)	[s 0 0 0 0 c 0 0 0 0]
Step 4	Press once the MD STOP button.	INNER menu	[_ _ I N N E R _ _]

• 0 0 0 0 : Address

• Press the MD STOP button while the INNER menu is displayed, to shift to the TEST mode STOP state.

11. EJECT mode

Step No.	Setting Method	Remarks	Display
Step 1	Testmode EJECT state		[_ _ E J E C T _ _]
Step 2	Press once the CD STOP button.	Max. power output state	[x p w _ _ _ _ _]
Step 3	Press once the CD STOP button.	Record power output state	[r p w _ _ _ _ _]
Step 4	Press once the CD STOP button.	Playback power output state	[p p w _ _ _ _ _]
Step 5	Press the CD ► MD EDIT button.	TEMP setting of EEPROM setting (Refer to TEMP setting of EEPROM)	
Step 6	Press the TRACK EDIT button.	CONTROL setting of EEPROM setting (Refer to CONTROL setting of EEPROM)	

● Lead-in switch position measurement mode

Note: Adjust the lead-in switch position to 5FF85 to FFD2.

1. Loosen the screw (A) x 3 pcs. which fix the mechanism switch PWB.

2. Retighten the screw, pressing the mechanism switch PWB in the arrow direction, and then measure the lead-in switch position again.

After position adjustment fix with the three screws (A). (See Fig. 29.)

Note: After tightening the two screws on the PWB apply Screw Lock.

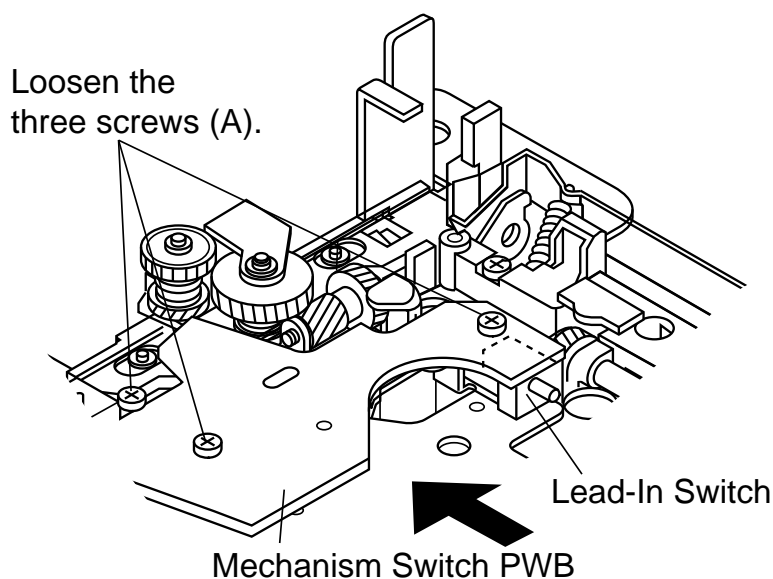


Figure 29

● Forced rotation of loading motor

While the display indication is test mode STOP state or EJECT state, the loading motor can be forcibly rotated by press the VOL UP/DOWN button.

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● Mechanism Adjustment

1. Optical pickup grating inspecting method

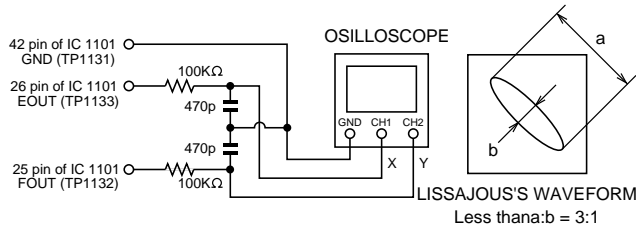


Figure 30-1 Optical Pickup Grating Deviation Measuring Method

After the automatic adjustment is performed in the AUTO mode (test mode) with the aid of high reflection MD disc ("COMPLATE" is displayed), the Lissajous's waveform (x-y) is adjusted.

1. Slightly loosen the 3 screws of spindle moto, and maken an adjustment, observing the Lissajous's waveform.
2. After adjustment tighten the screw in order of ① , ② , ③ .

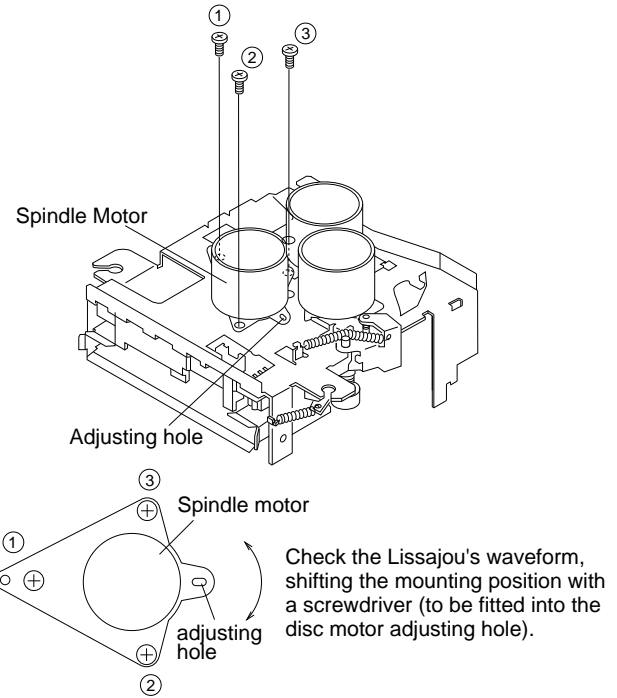


Figure 30-2

2. Jitter adjustment and checking method

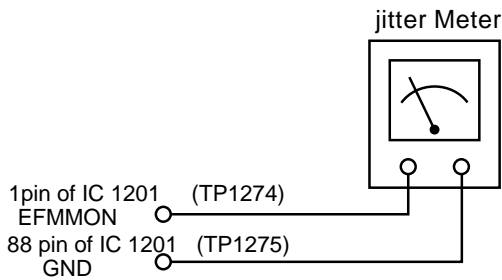


Figure 30-3 Jitter connection diagram

After performing automatic adjustment in AUTO mode of TEST mode using the low reflection MD disc, check this jitter in pit continuous playback and groove continuous playback mode.

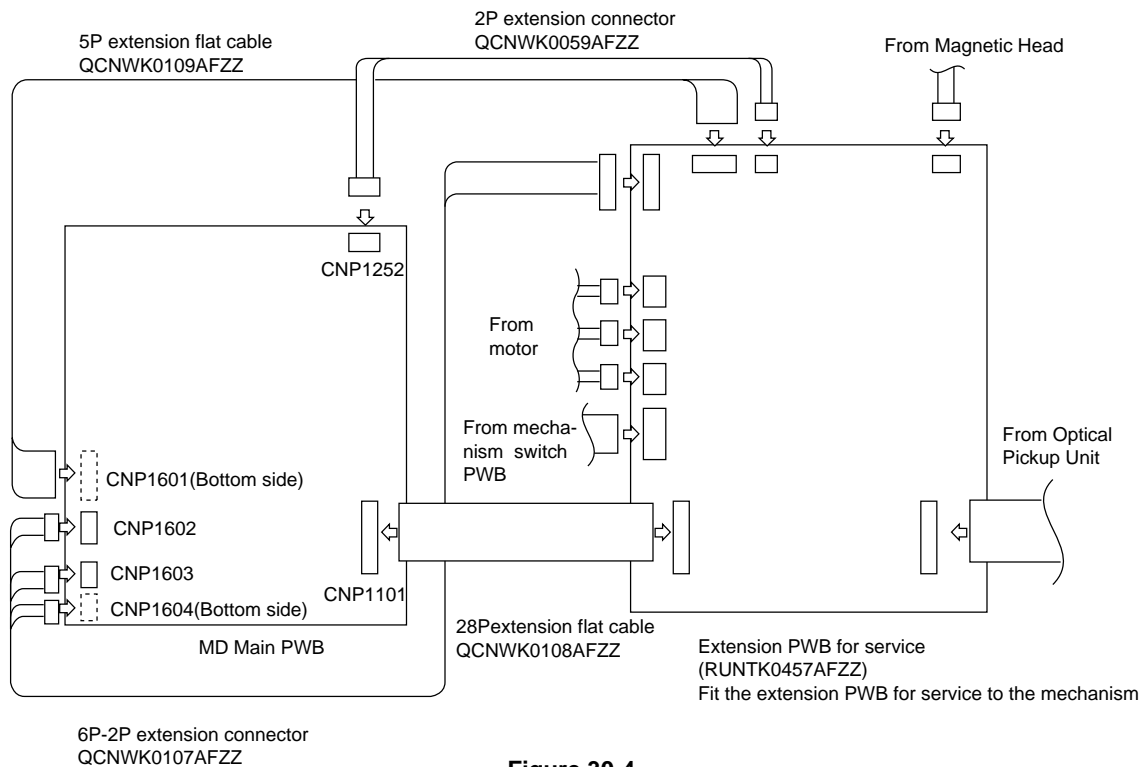


Figure 30-4

EXPLANATION OF ERROR DISPLAY

Error display	Errors	Corrective action
Can't REC	<ul style="list-style-type: none"> Defect occurred successively 10 times during REC-PLAY. As a result of occurrence of defect during REC-PLAY the recordable cluster became zero. Address is unreadable. REC state cannot be set for 20 seconds although retry is repeated. 	<ul style="list-style-type: none"> Check that the disc is free from flaw, dust and fingerprint. Check whether there is any black spot. Check for disc disalignment and run-out.
Can't COPY	<ul style="list-style-type: none"> The following judgement is made according to the channel status of digital signal which was input from D-IN during REC-PAUSE or REC-PLAY. <ol style="list-style-type: none"> Other than audio signal Other than signals of home-use appliances Copy NG due to inversion of copy bit in CD. 	<ul style="list-style-type: none"> Check whether CD is copy-inhibited one. (An example: CD-R)
Din UNLOCK	<ul style="list-style-type: none"> The digital signal which was input from D-IN during REC-PAUSE, REC-PLAY or CD FUNC playback caused the following. <ol style="list-style-type: none"> PLL of digital IN was unlocked. Locking occurred in condition other than FS = 44.1 kHz 	<ul style="list-style-type: none"> Check whether there is any abnormality in the D-IN signal line.
TOC FULL	<ul style="list-style-type: none"> There were no areas to record music or character information.(music name, disc name, etc.) during REC-PLAY. When an attempt to start is made, recordable area does not remain. 	<ul style="list-style-type: none"> Replace the disc with a recording/playback disc in which an area to register UTOC remains.
UTOC ERR R	<ul style="list-style-type: none"> ETNO > LTNO FTNO ≠ 0 or 1 UTOC recorded on disc could not be read. 	<ul style="list-style-type: none"> UTOC data is not normal. Replace the disc with other disc.
UTOC ERR A	<ul style="list-style-type: none"> Start address > End address 	<ul style="list-style-type: none"> UTOC data is not normal. Replace the disc with other disc.
UTOC ERR L0~4	<ul style="list-style-type: none"> Any data of UTOC 0 to 4 looped. 	<ul style="list-style-type: none"> UTOC data is not normal. Replace the disc with other disc.
NOT AUDIO	<ul style="list-style-type: none"> Nonaudio data was recorded in the track mode of currently selected TNO. 	<ul style="list-style-type: none"> Select other TNO or replace the disc with other disc.
? DISC	<ul style="list-style-type: none"> Data "MINI" of system ID which has been written in TOC with ASCII code is not correct. The disc type written in TOC does not correspond to pre-mastered MD, recording MD and hybrid MD. 	<ul style="list-style-type: none"> The loaded disc is not applicable. Replace the disc, and check.
DISC FULL	<ul style="list-style-type: none"> When an attempt to set REC-PAUSE was made, there were no recordable areas. 	<ul style="list-style-type: none"> Replace the disc with other recording disc in which recording area remains.
PLAYBACK MD	<ul style="list-style-type: none"> An attempt to set REC-PAUSE or to start editing was made on the playback-only disc. 	<ul style="list-style-type: none"> The loaded disc is a Playback-only disc. Replace the disc with a recording disc.
PROTECTED	<ul style="list-style-type: none"> An attempt to record or edit was made on the record/playback disc with its careless erase preventing tab being in erase preventing state. An attempt was made to edit the track which was write-protected by information written in UTOC. 	<ul style="list-style-type: none"> Return the careless erase preventing tab to its initial position, and redo. The track on which an attempt to edit was made is a write-protected track. Redo on another track.
Can't EDIT	<ul style="list-style-type: none"> Specific editing conditions were not satisfied. 	<ul style="list-style-type: none"> The applied operation procedure is not proper. Redo, applying the correct procedure.
TEMP OVER	<ul style="list-style-type: none"> Owing to occurrence of some trouble internal temperature of set (MD unit) rose excessively. 	<ul style="list-style-type: none"> Check by troubleshooting. Check whether the ambient temperature is too high.
DISC ERR RD PA WR	<ul style="list-style-type: none"> Read data was not correct or data could not be read correctly. Trouble occurred during recording if music data, resulting in record failure. 	<ul style="list-style-type: none"> Data of TOC or UTOC is not normal or disc has flaw. Replace the disc with other disc.
TOC ERR S TOC ERR R TOC ERR T	<ul style="list-style-type: none"> TOC was read but data was not correct. TOC could not be read. 	<ul style="list-style-type: none"> The TOC information recorded on disc does not conform to the MD standard. Replace the disc with other disc. The disc has flaw. Replace the disc with other disc.
UTOC W ERR	<ul style="list-style-type: none"> Trouble occurred during rewriting of UTOC, resulting in UTOC rewriting failure. 	<ul style="list-style-type: none"> The disc has flaw. Replace the disc with other disc.
FOCUS ERROR	<ul style="list-style-type: none"> After the disc was loaded, focusing failure occurred. 	<ul style="list-style-type: none"> Check that the disc is free from flaw, dust, fingerprint and black spot. Check for disc disalignment and run-out.

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Error display	Errors	Corrective action
BLANK MD	<ul style="list-style-type: none"> • UTOC was read but total TNO and the number of characters of NAME was 0? 	<ul style="list-style-type: none"> • Perform recording to check that the disc is recordable disc.
DEFECT	<ul style="list-style-type: none"> • Focusing error was caused by shock during REC-PLAY. 	<ul style="list-style-type: none"> • Check that the disc is free from flaw,dust, fingerprint and black spot. Check for disc disalignment and run-out.
TOC W ERROR	<ul style="list-style-type: none"> • Although UTOC can be read but UTOC cannot be rewritten. 	<ul style="list-style-type: none"> • Check that the record head contact is normal. Check that there is no broken wire between PWB and the recording head.
MD ERROR	<ul style="list-style-type: none"> • Data of EEPROM is not correct. 	<ul style="list-style-type: none"> • Once reset, and redo. If error occurs persistently, replace EEPROM.

EXPLANATION OF MECHANISM ERROR

Error display	Errors
MECHA_ERR1_*	Ejection failure
MECHA_ERR2_*	Head-up failure
MECHA_ERR3_*	Head-down failure

HINF (IC1401 97 PIN)

* = E Ejection completion position $< 1.3 \text{ V}$

* = MHorizontal midway position > 3.06 V

* = L Load completed position 1.853~2.48 V

* = D Head-down position 1.3~1.853 V

● E²-PROM (IC402) writing procedure

1. Procedure to replace E²-PROM and to write the initial value of microcomputer in E²-PROM

- (1) Replace E²-PROM.
- (2) Refer to the latest E²-PROM data list.
- (3) Hold down the ►► button and MD PLAY button, and press the POWER button to enter the test mode.
- (4) Indication of version.

[t s m ○ ○ ○ ○ e ○ ○]

E²-PROM version (c to z)

Microcomputer ROM version

Model code

- (5) Press the CD PLAY key 7 times.
[EEPROM SET]
- (6) Perform the operation shown in the "E²-PROM setting mode chart", compare the indication with the E²-PROM data list, and make a setting according to the E²-PROM data list, using VOL UP button or VOL DOWN button.
- (7) Set the temperature reference value.
(Refer to "Temperature reference setting procedure".)
- (8) The setting must conform to the E²-PROM data list.
- (9) Turn off power supply to write in E²-PROM.

2. Temperature reference value setting procedure (to be executed at room temperature within 21 to 29°C)

- (1) Test mode stop state.
[t s m○○○○○ e ○○]
- (2) Correct temperature depending on ambient temperature according to the following table.

Ambient temperature	correction
12.2 °C ~ 15.8 °C	-0 3 H
15.9 °C ~ 19.6 °C	-0 2 H
19.7 °C ~ 23.2 °C	-0 1 H
23.2 °C ~ 26.8 °C	± 0 H
26.9 °C ~ 30.7 °C	+0 1 H
30.8 °C ~ 34.3 °C	+0 2 H
34.4 °C ~ 37.9 °C	+0 3 H

An example: When ambient temperature is 22°C and measured temperature is 73H

Temperature setting = 73 H - 01 H
= 72 H

* When the measured temperature fluctuates between two values, take lower one (if temperature fluctuates between 73H and 72H, take 72H).

- (3) Press the CD PLAY button 7 times.
[E E P R O M S E T]
- (4) Press the MD PLAY button 1 times.
[F O C U S]
- (5) Press the CD PLAY button 4 times.
[T e m p]
- (6) Press once the MD PLAY button.
[T E M P ○ ○ ◆ ◆]
○ ○ : Measured temperature, ◆ ◆ : Temperature setting
- (7) Set temperature to the value determined above, using the VOL UP or VOL DOWN button.
- (8) Press the MD STOP button.
[T e m p]

● E²-PROM Data List

Focus setting

Item indication	Setting
FG ○○	9 7 H
FF 1 ○○	9 E H
FF 2 ○○	E 0 H
FZHLEV ○○	E D H
FOKLEV n ○○	0 8 H
FOKLEV f ○○	8 8 H
FOKLPP n ○○	0 0 H
FOKLPP f ○○	8 8 H
WAIT f ○○	9 0 H

Spin setting

Item indication	Setting
SPG ○○	2 0 H
SPG — in ○○	B 8 H
SPG — mid ○○	7 6 H
SPG — out ○○	5 0 H
SP 1 ○○	1 0 H
SP 2 ○○	8 7 H
SP 3 ○○	E 3 H
SP 4 ○○	E 3 H
SP 5 ○○	1 0 H
SPDLIM ○○	7 8 H

Tracking setting

Item indication	Setting
TG ○○	4 5 H
TF 1 ○○	7 0 H
TF 2 ○○	E 0 H
SVCNT 4 ○○	0 1 H
TRBLV o ○○	5 3 H
TRBLV t ○○	6 0 H
TRKLV o ○○	4 C H
TRKLV t ○○	3 8 H
TDPW o ○○	8 9 H
TDPW t ○○	1 A H
SLCT o ○○	0 0 H
SLCT t ○○	4 0 H
SLCT m ○○	5 3 H
TCRSCIP ○○	1 6 H
COTLVP ○○	1 4 H
COTLVP r ○○	2 8 H
WAIT m ○○	FF H

Slide setting

Item indication	Setting
SLG ○○	3 5 H
SL 2 ○○	2 7 H
SLDLIM ○○	6 5 H
SLDLEV ○○	1 6 H
SLKLV k ○○	5 5 H
SLKLV t ○○	3 A H
SLKLV m ○○	5 5 H

Control setting

Item indication	Setting
CONTRL 1 ○○	8 0 H
CONTRL 2 ○○	0 1 H
SPKLEV m ○○	2 6 H
ADJT T M ○○	1 4 H
HDEQAD ○○	9 0 H
LDEQAD ○○	8 F H
GDEQAD ○○	9 1 H
MDEQBC ○○	9 0 H
LDEQBC ○○	8 F H
GDEQBC ○○	8 A H
HALSG ○○	2 1 H
LALSG ○○	2 1 H
GALSG ○○	2 1 H
HALSOFS ○○	FE H
LALSOFS ○○	0 0 H
GALSOFS ○○	0 0 H

MD-X5H/CP-X5H

● E²-PROM Setting Mode Chart

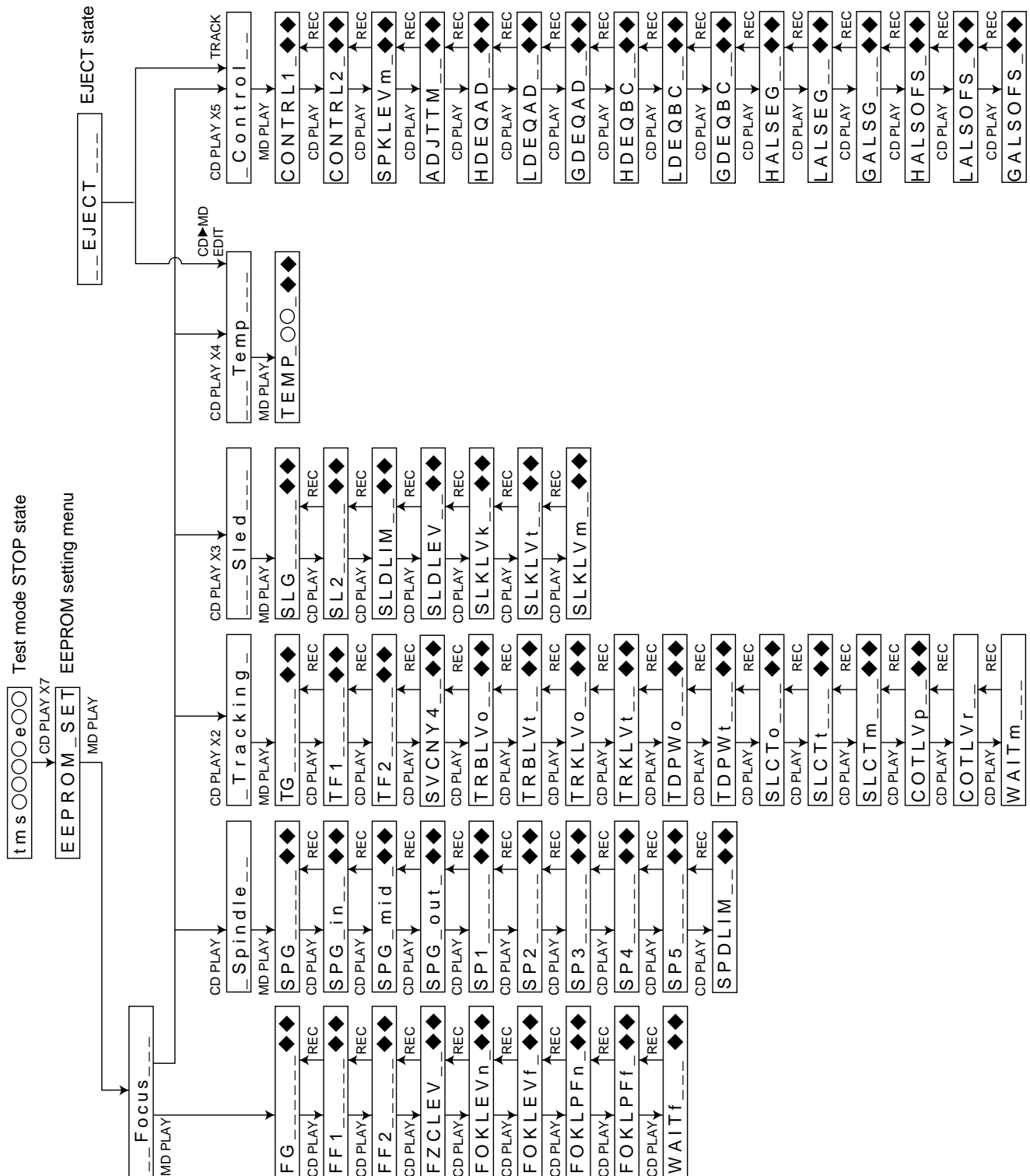


Figure 34

NOTES ON SCHEMATIC DIAGRAM

- Resistor:

To differentiate the units of resistors, such symbol as K and M are used: the symbol K means 1000 ohm and the symbol M means 1000 kohm and the resistor without any symbol is ohm-type resistor. Besides, the one with "Fusible" is a fuse type.

- Capacitor:

To indicate the unit of capacitor, a symbol P is used: this symbol P means micro-micro-farad and the unit of the capacitor without such a symbol is microfarad. As to electrolytic capacitor, the expression "capacitance/withstand voltage" is used.

(CH), (TH), (RH), (UJ): Temperature compensation

(ML): Mylar type

(P.P.): Polypropylene type

- Schematic diagram and Wiring Side of P.W. Board for this model are subject to change for improvement without prior notice.

- The indicated voltage in each section is the one measured by Digital Multimeter between such a section and the chassis with no signal given.

1. In the tuner section,

() indicates AM

< > indicates FM stereo

2. In the main section, a tape is being played back.

3. In the deck section, a tape is being played back.

() indicates the record state.

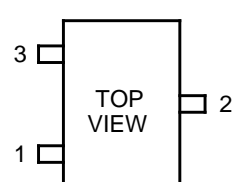
4. In the power section, a tape is being played back.

5. In the CD section, the CD is stopped.

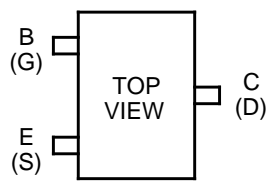
- Parts marked with "△" (□ = □) are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

REF. NO	DESCRIPTION	POSITION
SW701	OPEN/CLOSE	ON—OFF
SW702	PICKUP IN	ON—OFF
SW705	PRE-EQ	ON—OFF
SW706	X-BASS	ON—OFF
SW708	MD-STOP	ON—OFF
SW709	MD-PLAY/PAUSE	ON—OFF
SW712	CD-PLAY/PAUSE	ON—OFF
SW713	CD-STOP	ON—OFF
SW717	CD-OPEN/CLOSE	ON—OFF
SW727	AUX	ON—OFF
SW728	TUNER (BAND)	ON—OFF
SW729	TRACK UP/TUNING UP	ON—OFF
SW730	TRACK DOWN/TUNING DOWN	ON—OFF
SW731	POWER	ON—OFF

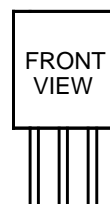
REF. NO	DESCRIPTION	POSITION
SW732	MD-MD EDIT	ON—OFF
SW733	TRACK	ON—OFF
SW734	CD-MD EDIT	ON—OFF
SW735	MD-REC	ON—OFF
SW736	MD-EJECT	ON—OFF
SW738	VOLUME UP	ON—OFF
SW739	VOLUME DOWN	ON—OFF
SW901	RESET	ON—OFF
SW1952	DIRECT	ON—OFF
SW1953	LEAD IN	ON—OFF
SW1954	PLAY	ON—OFF
SW1955	RECORD	ON—OFF
SW1956	LOAD	ON—OFF



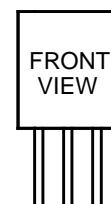
RN2404
RNC1407
RNC1404
RN1406



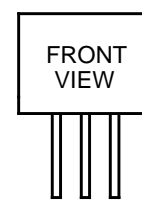
2SA1162 G
2SC2412 KR
2SK2909
KRC107 S



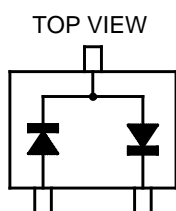
2SB562 C
2SC380 O
2SD467 D
2SD468 C
DTC363 TS
KRA107 M
KRC107 M
KTA1266 GR
KTC3199 GR



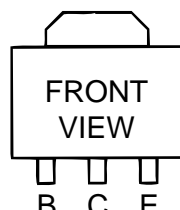
2SD2012



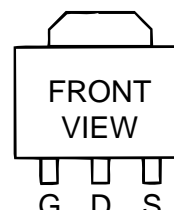
2SB1238 R



SB0209CP



2SA1314 C



2SK1473

Figure 35 TYPES OF TRANSISTOR AND LED

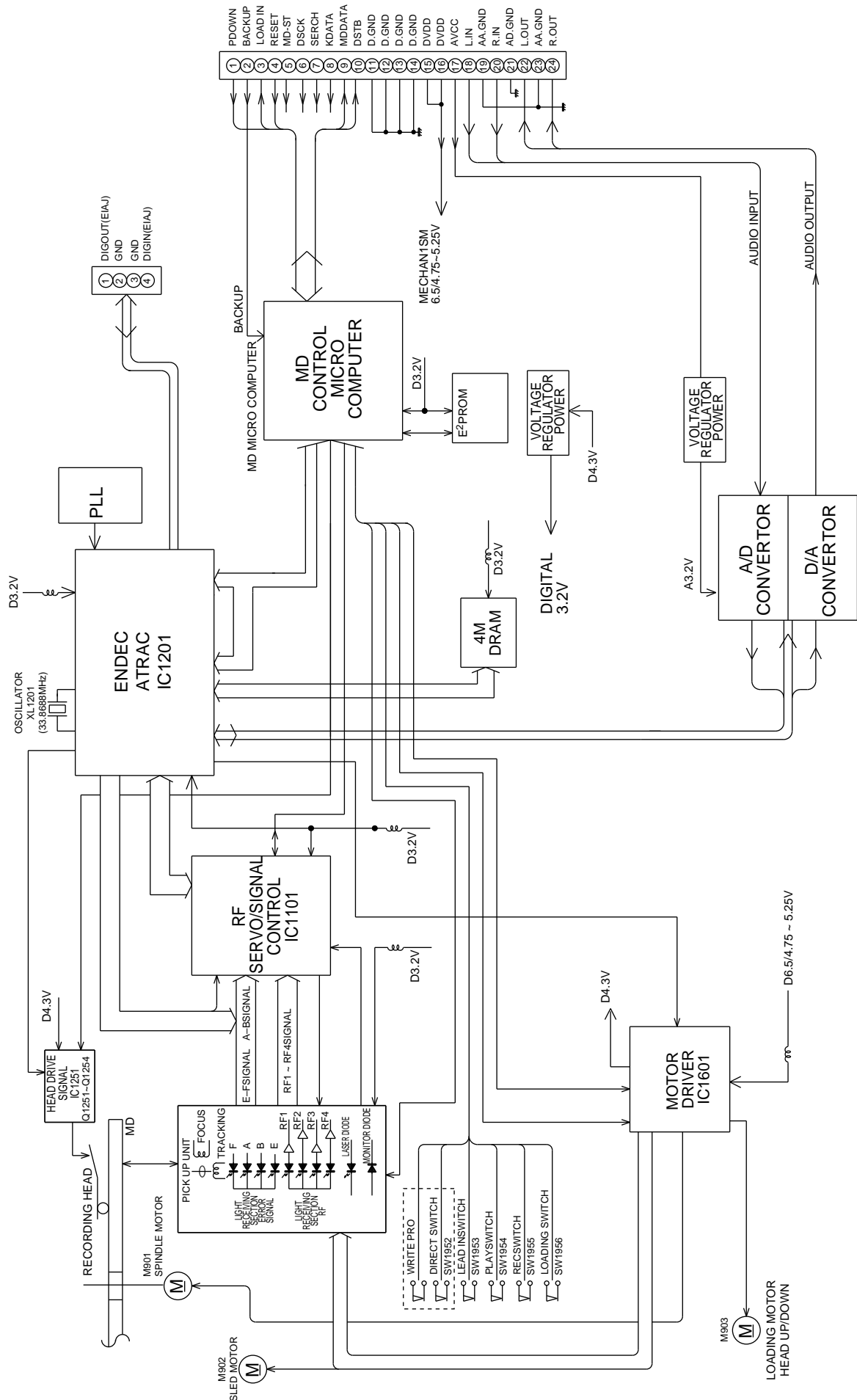


Figure 36 BLOCK DIAGRAM (1/4)

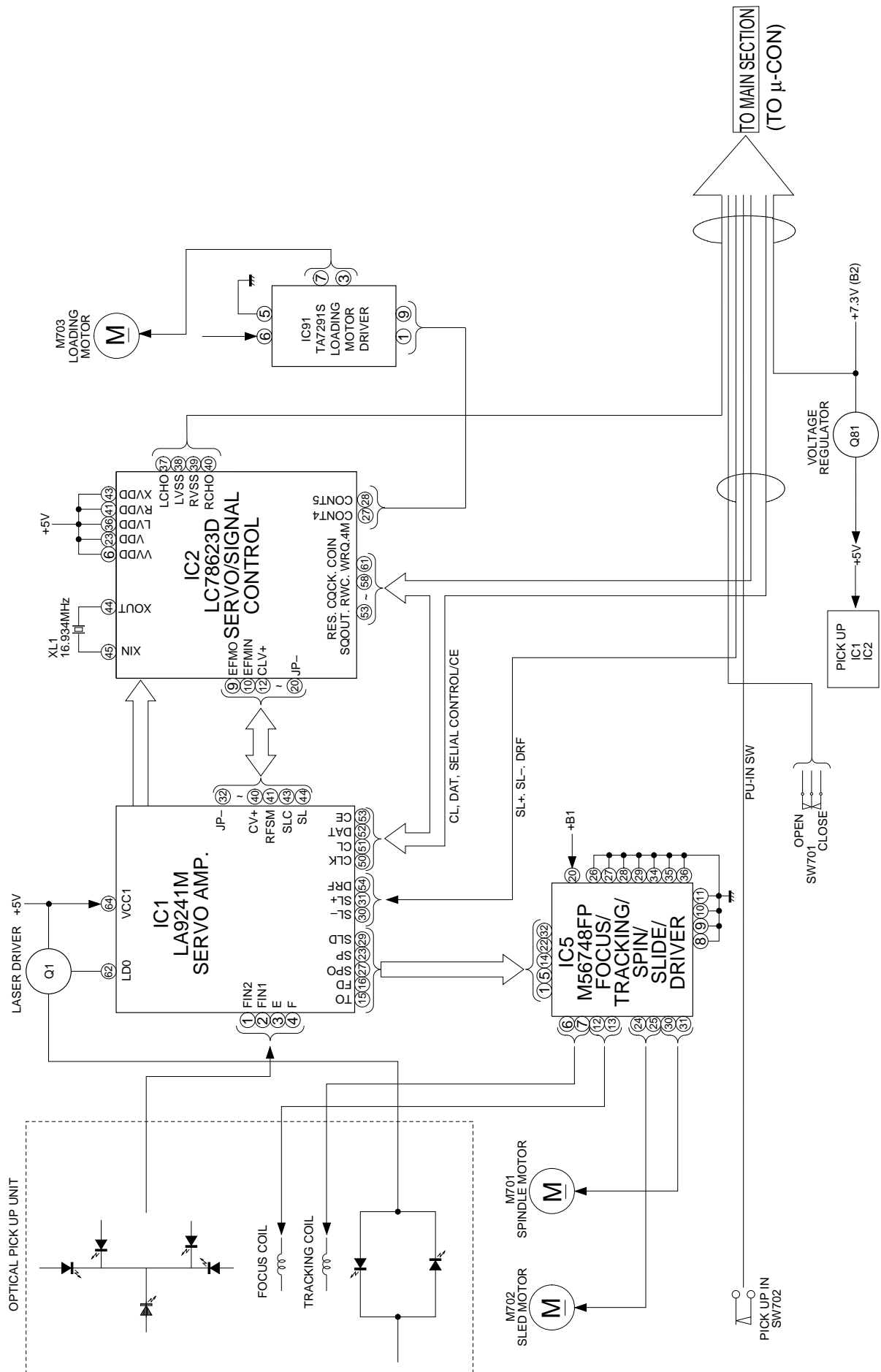


Figure 37 BLOCK DIAGRAM (2/4)

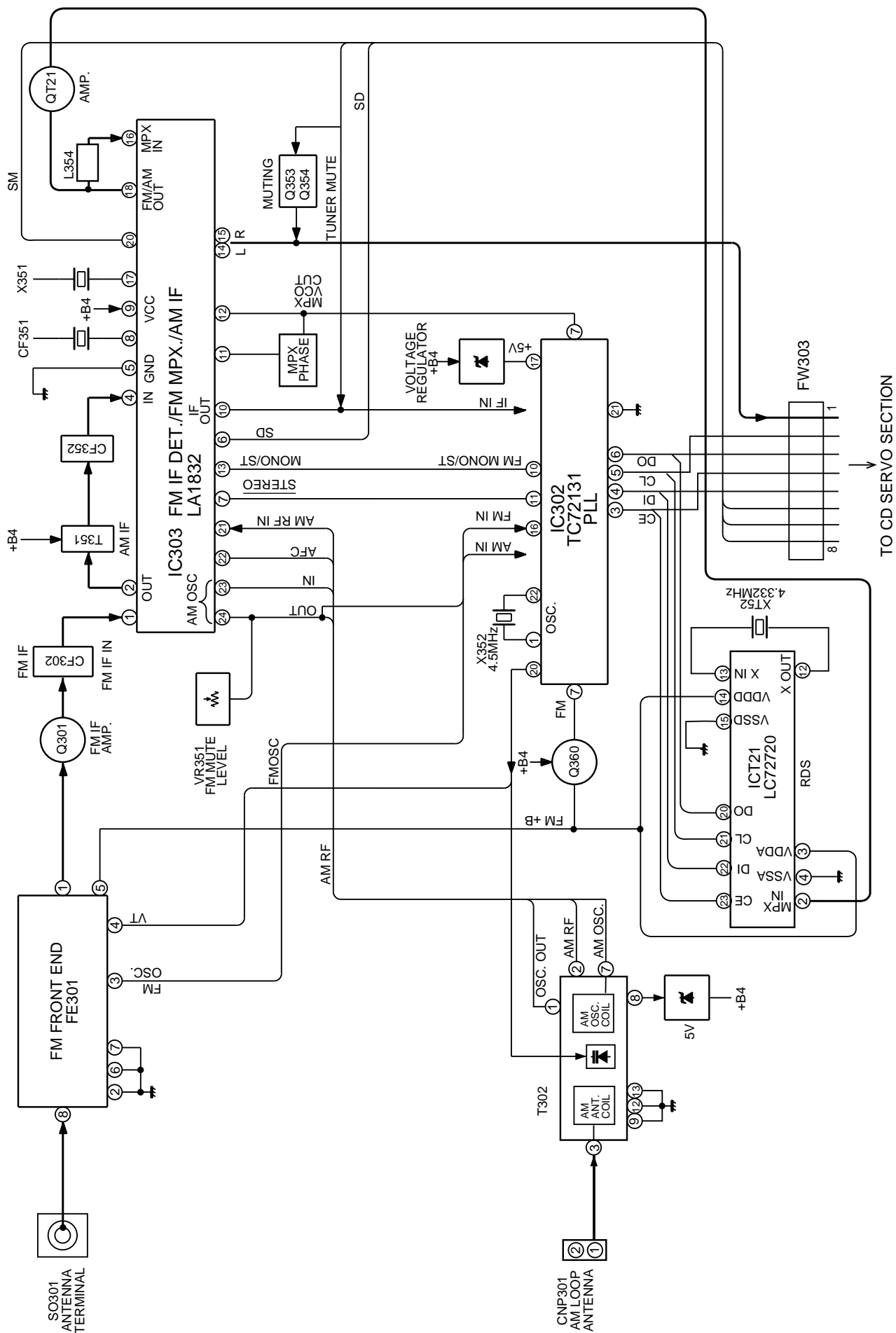


Figure 38 BLOCK DIAGRAM (3/4)

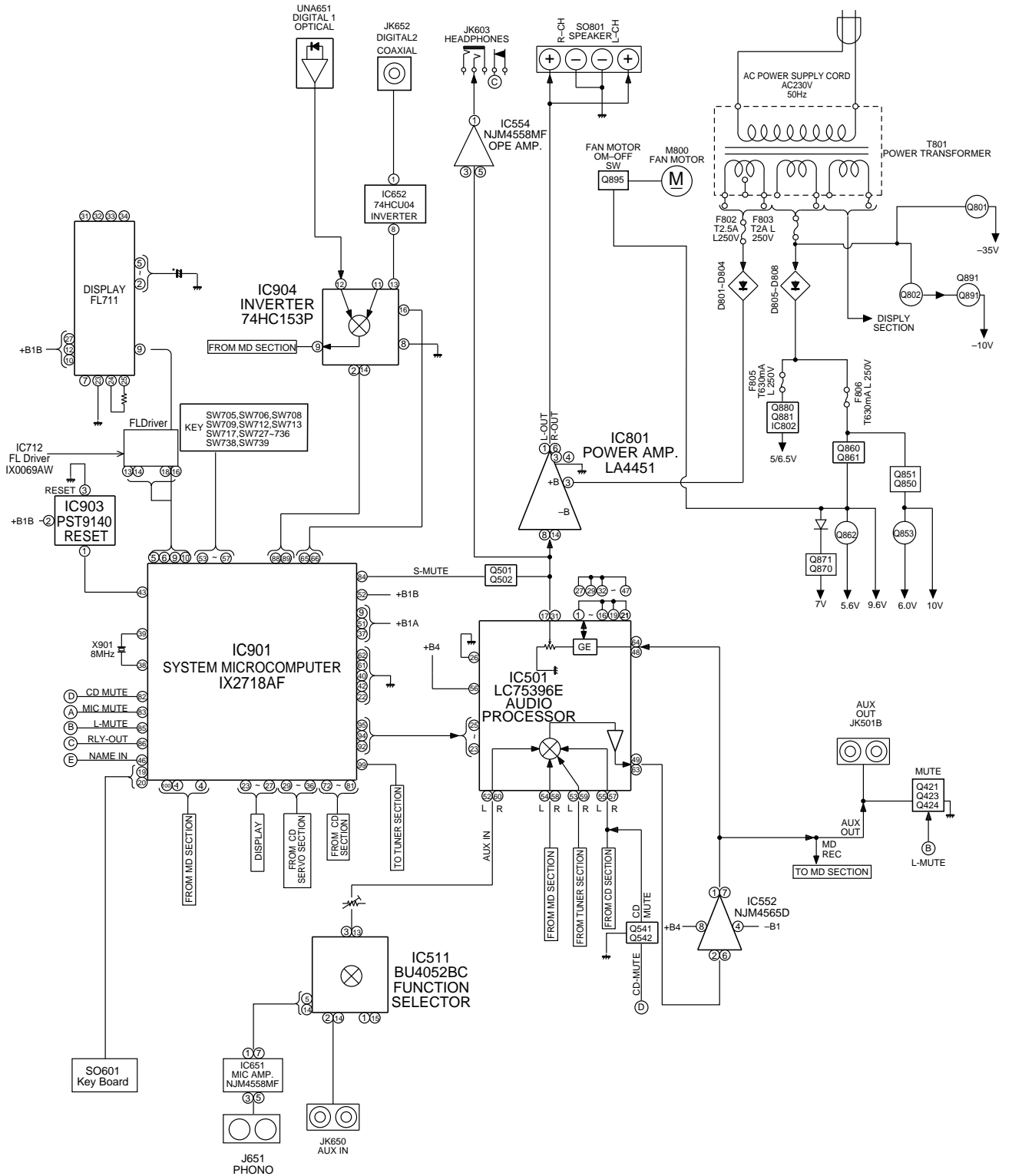


Figure 39 BLOCK DIAGRAM (4/4)

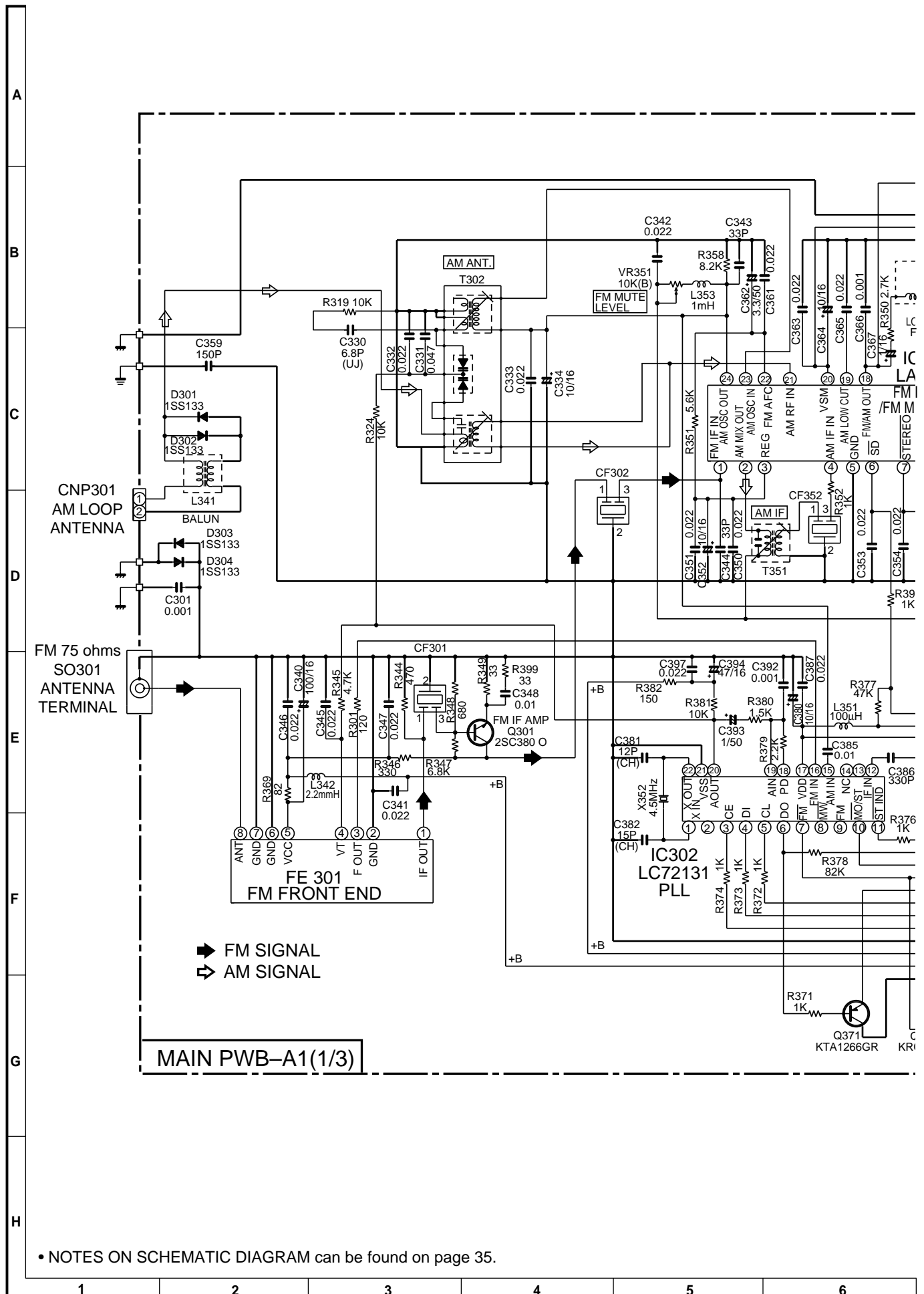


Figure 40 SCHEMATIC DIAGRAM (1/16)

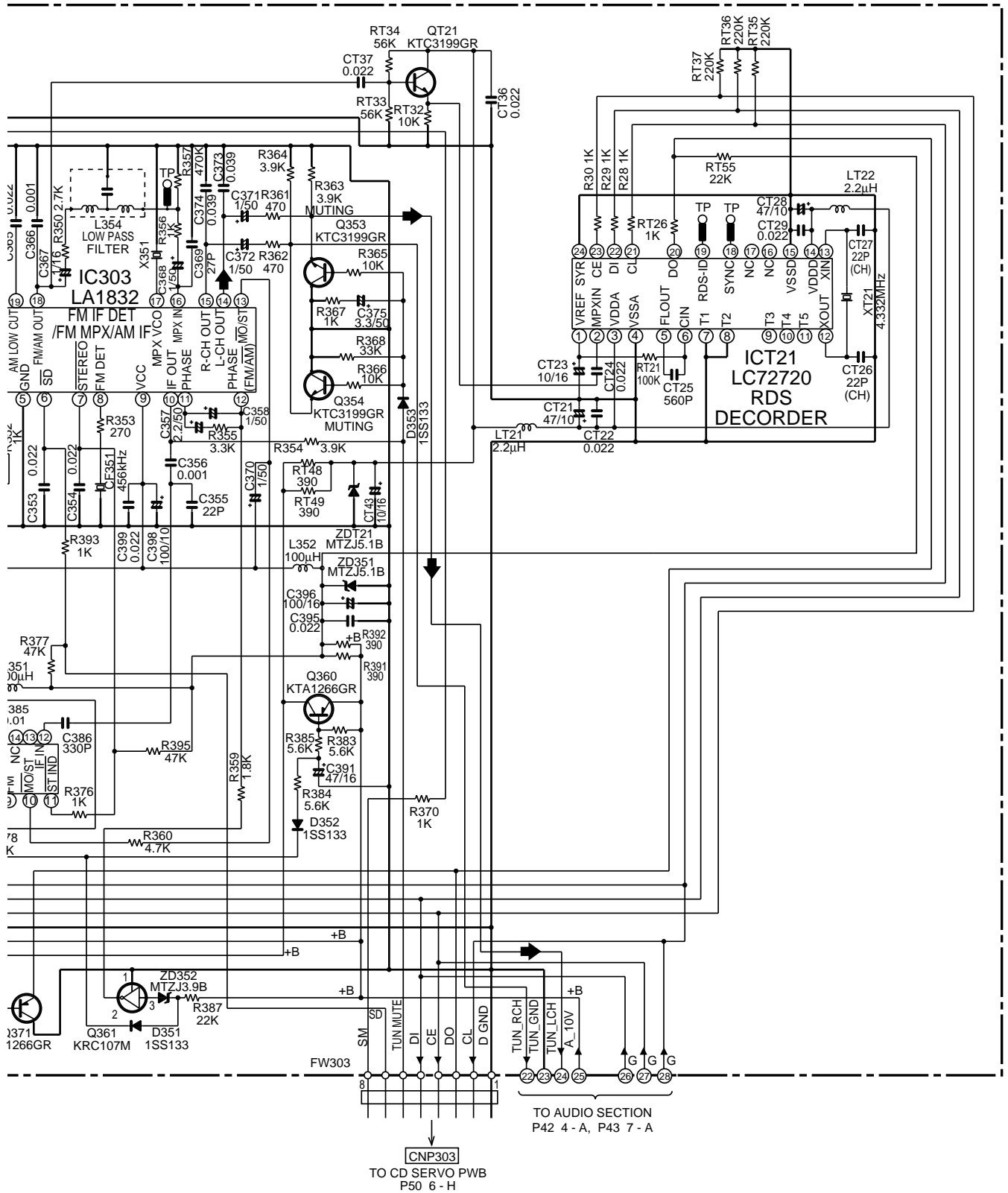


Figure 41 SCHEMATIC DIAGRAM (2/16)

- 42 -

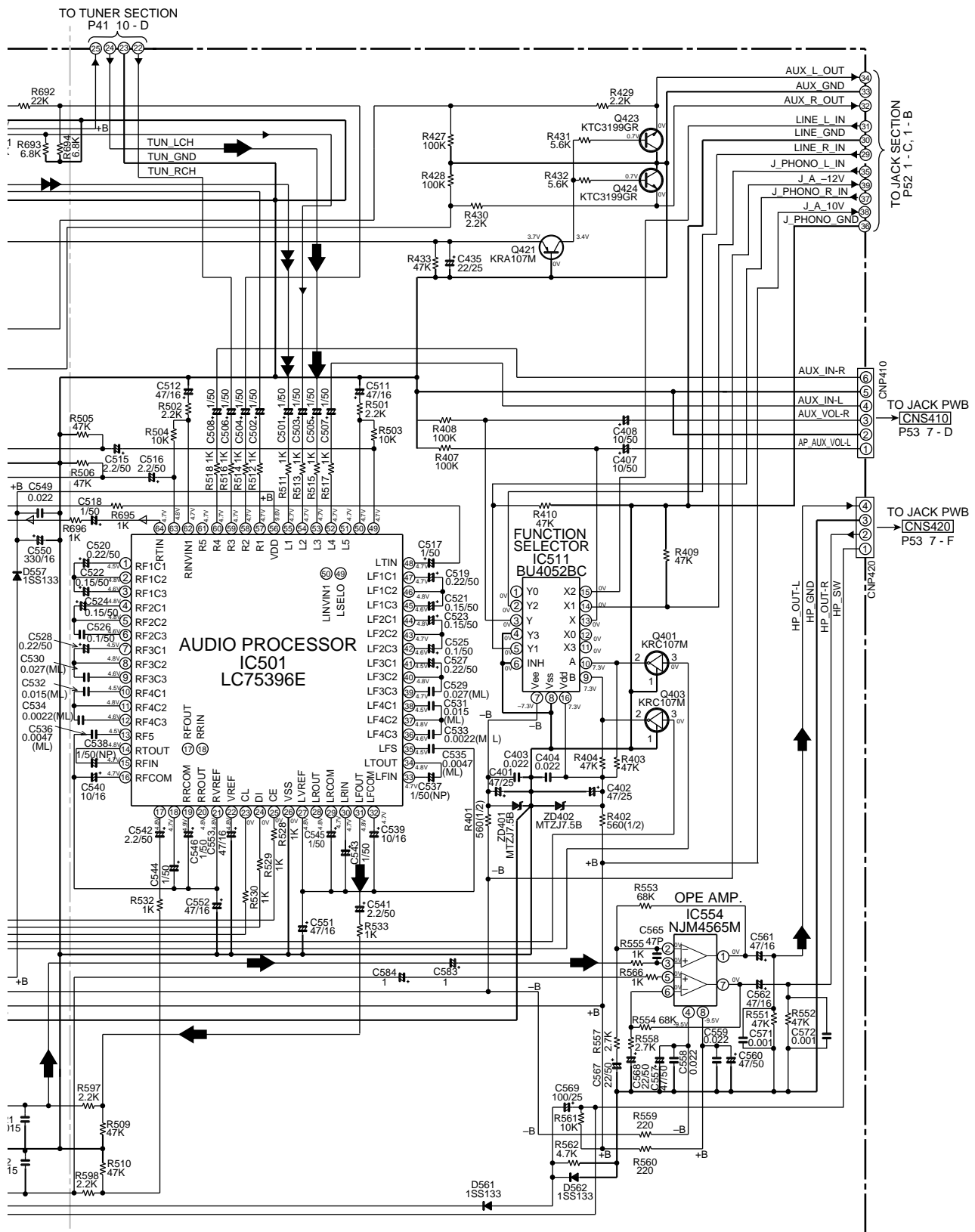


Figure 43 SCHEMATIC DIAGRAM (4/16)

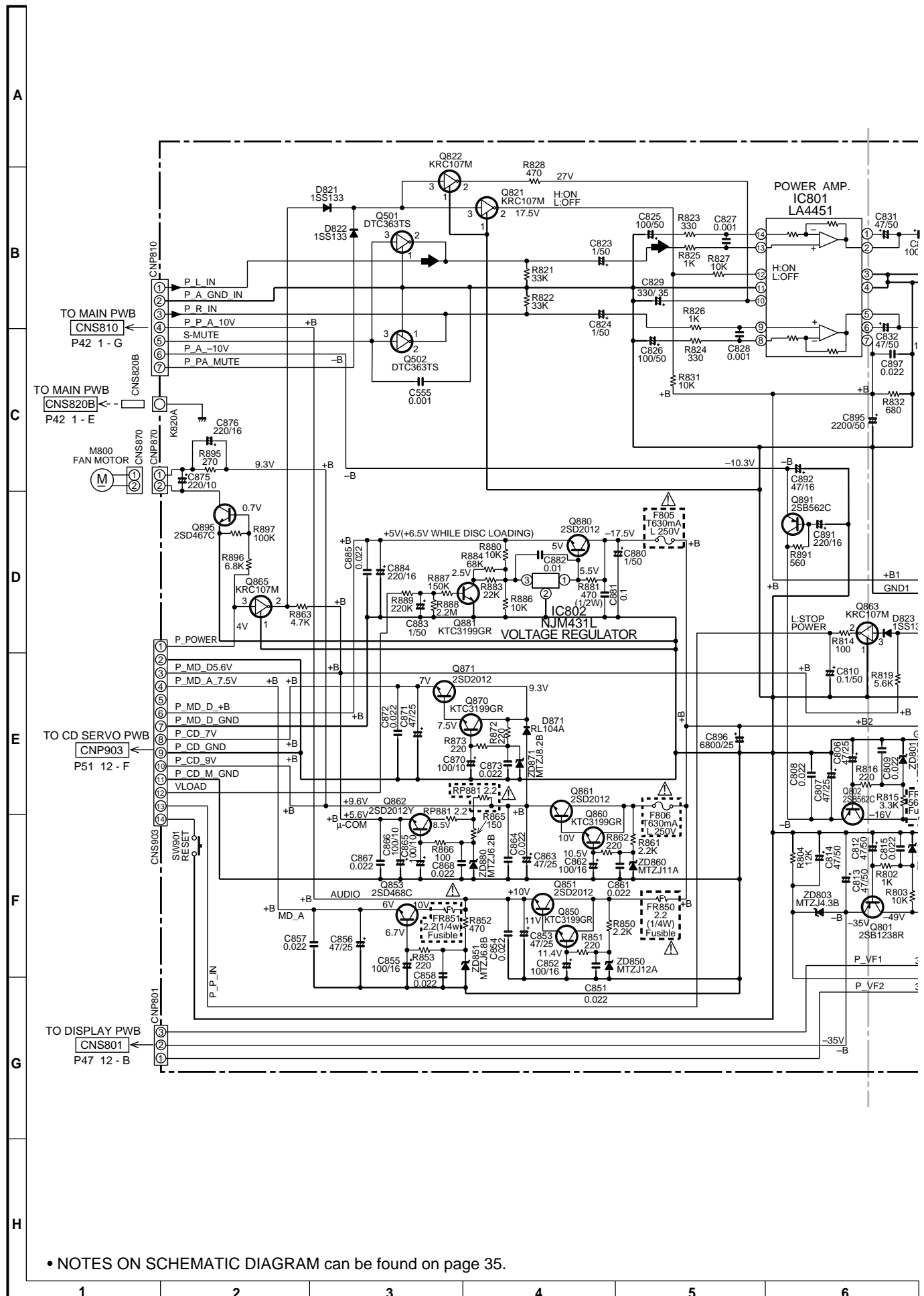
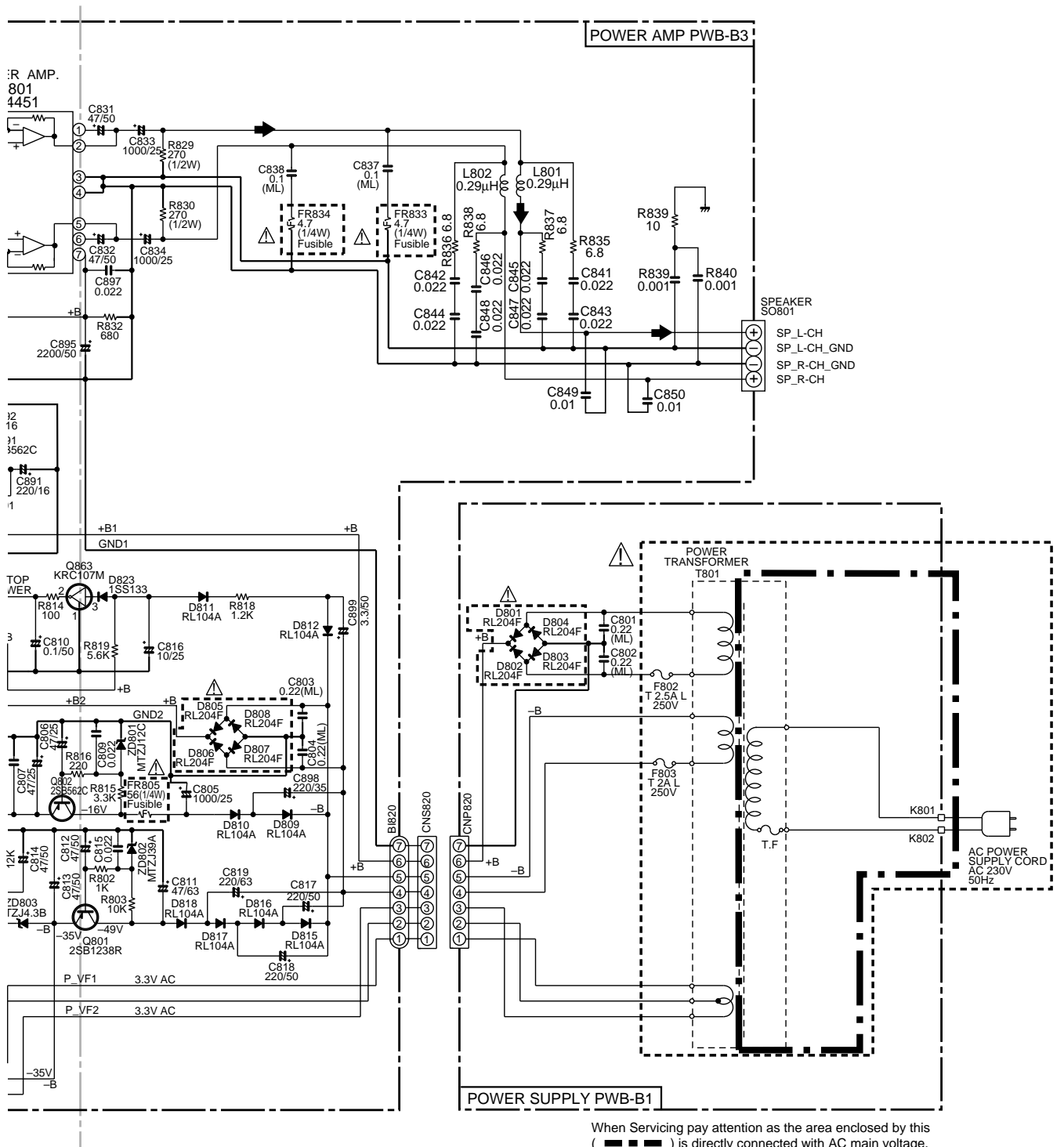


Figure 44 SCHEMATIC DIAGRAM (5/16)



7	8	9	10	11	12
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Figure 45 SCHEMATIC DIAGRAM (6/16)

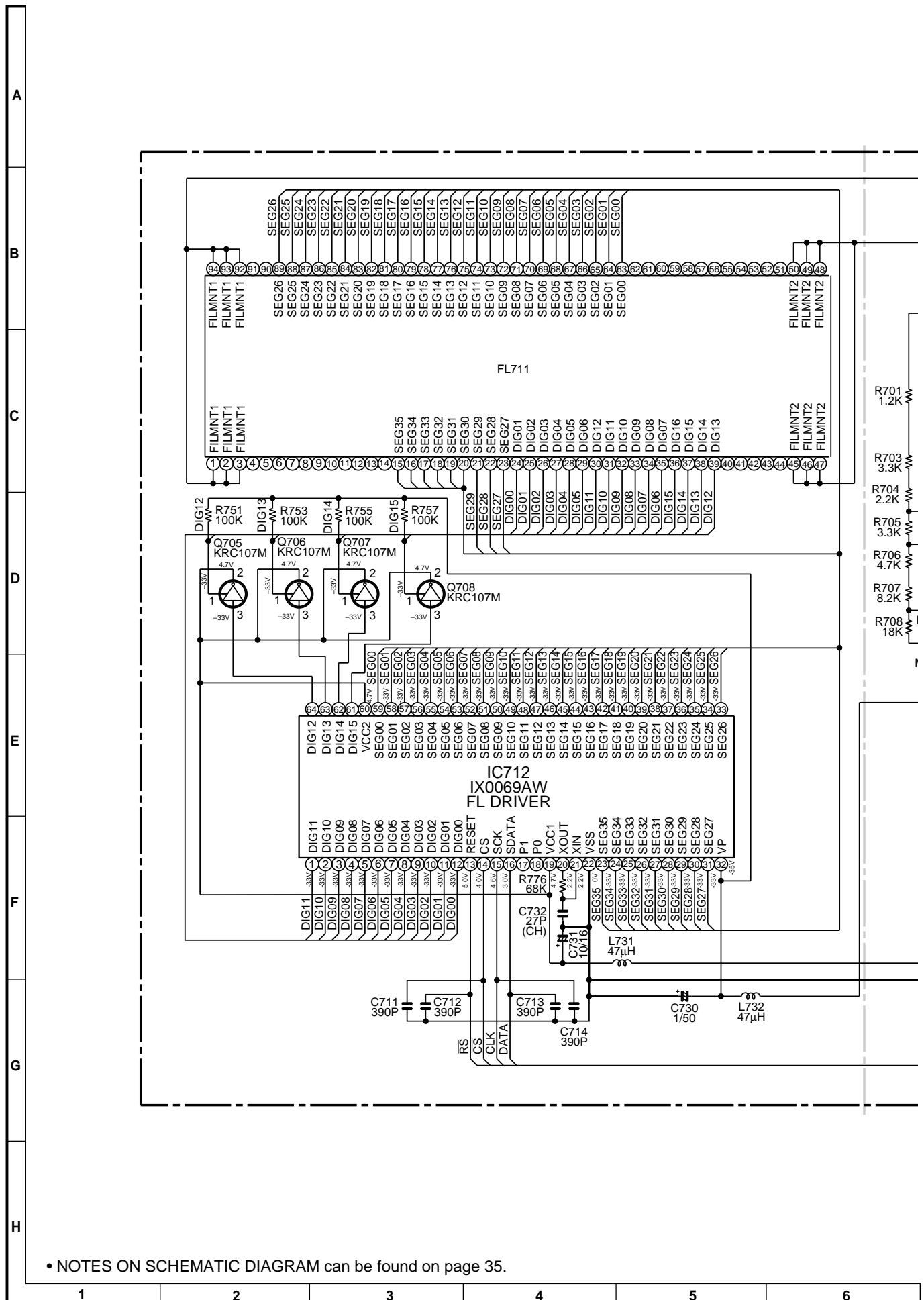


Figure 46 SCHEMATIC DIAGRAM (7/16)

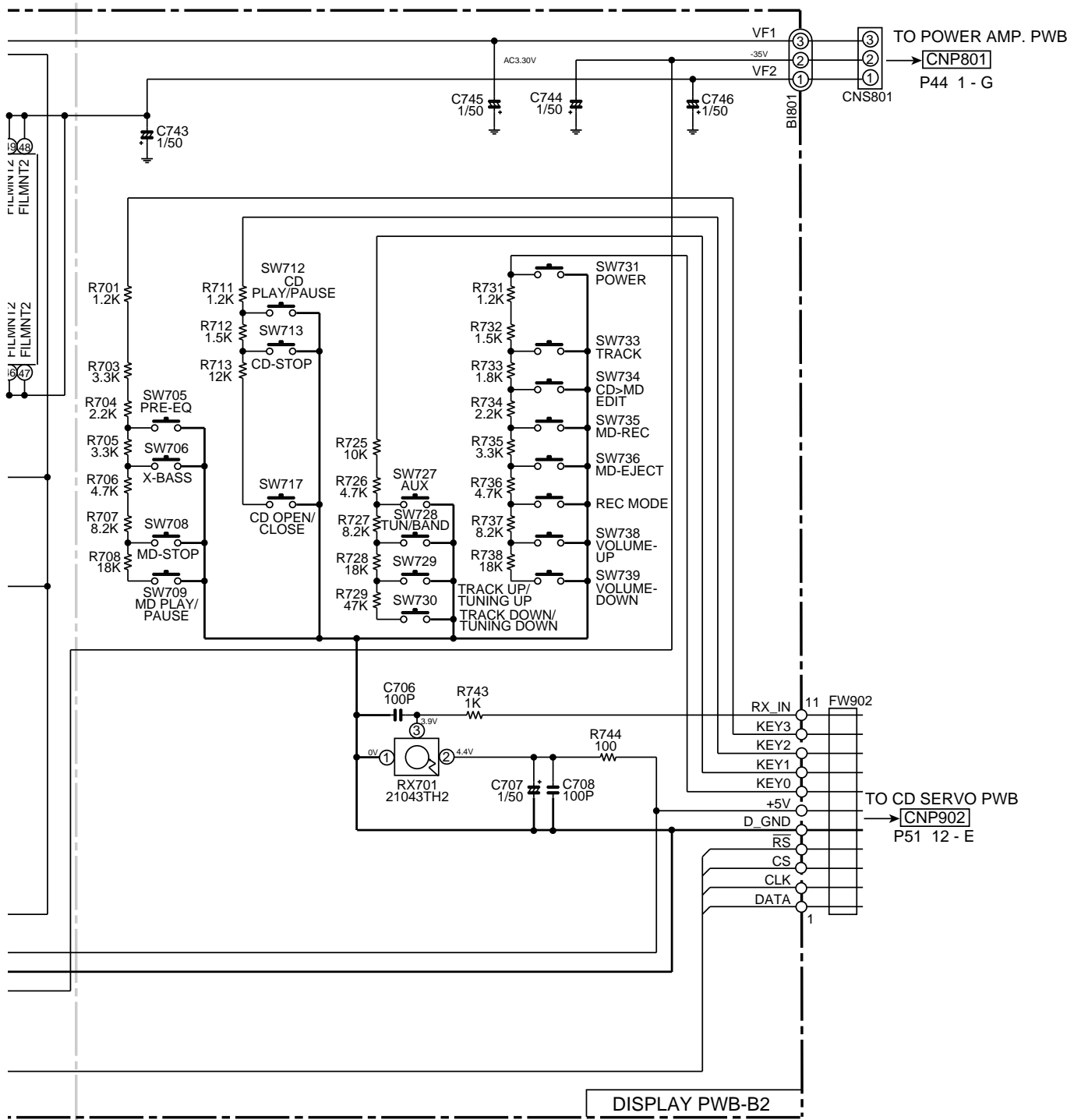
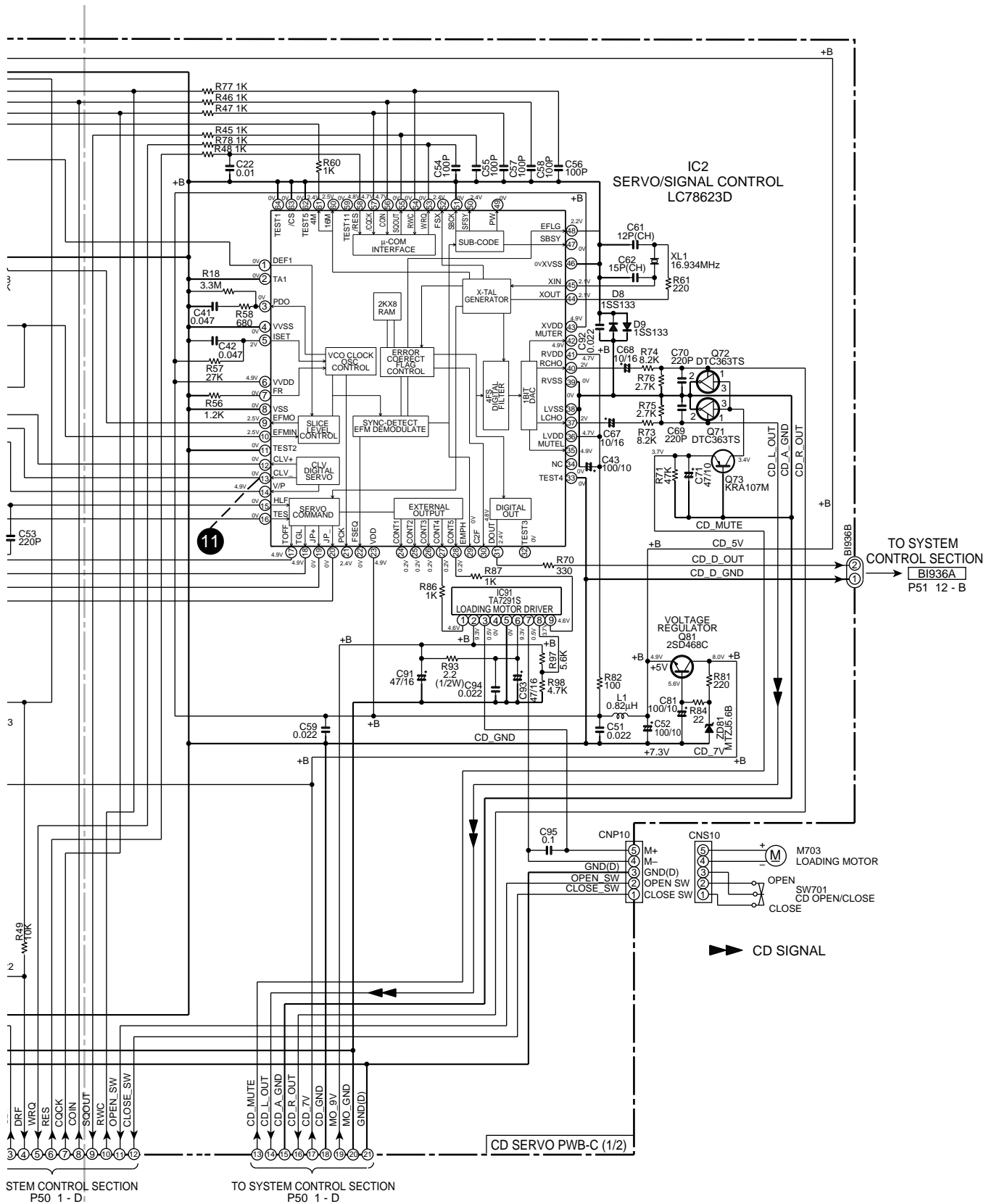


Figure 47 SCHEMATIC DIAGRAM (8/16)

- 48 -



• The numbers ① to ⑪ are waveform numbers shown in page 66.

7	8	9	10	11	12
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Figure 49 SCHEMATIC DIAGRAM (10/16)

– 50 –

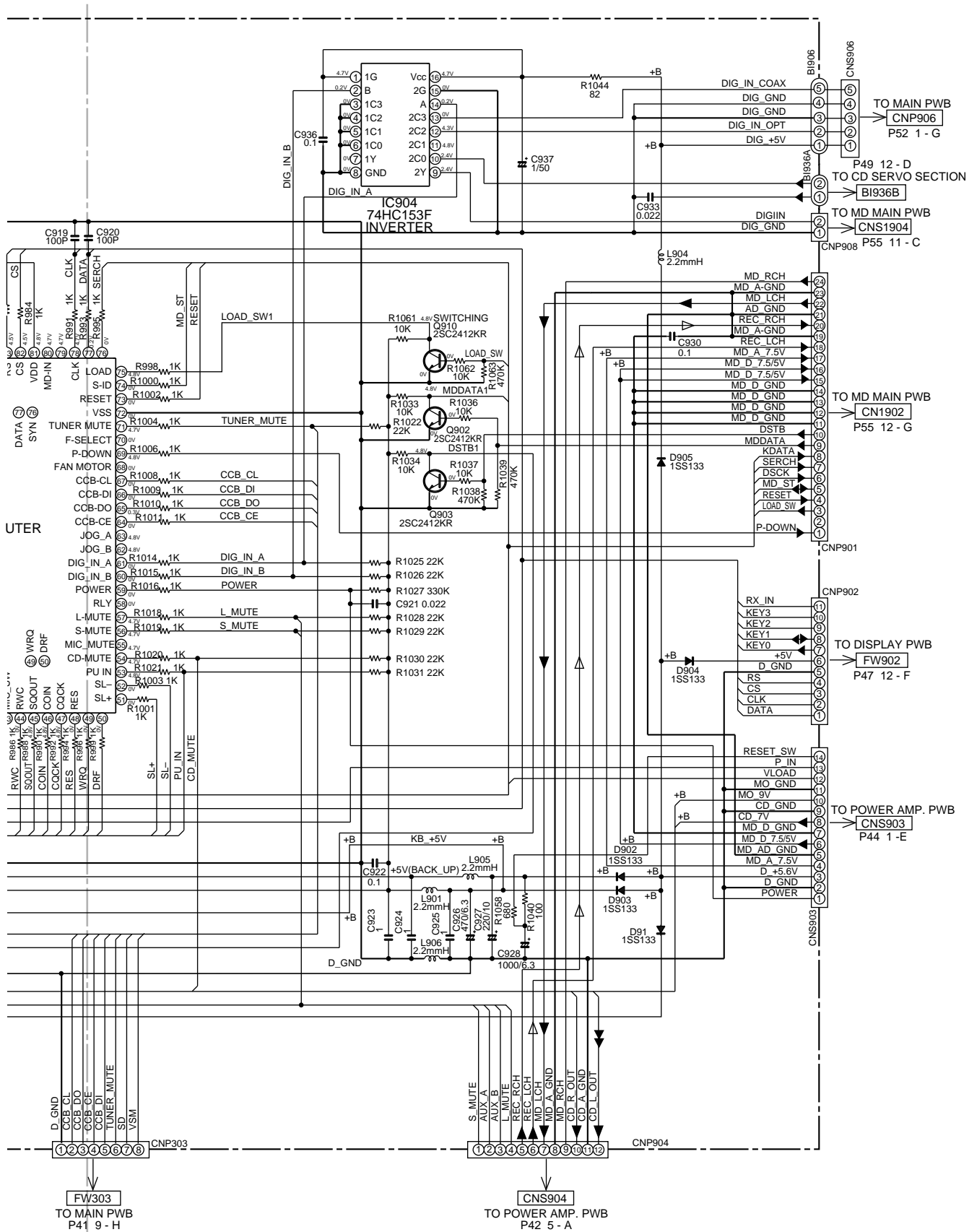


Figure 51 SCHEMATIC DIAGRAM (12/16)

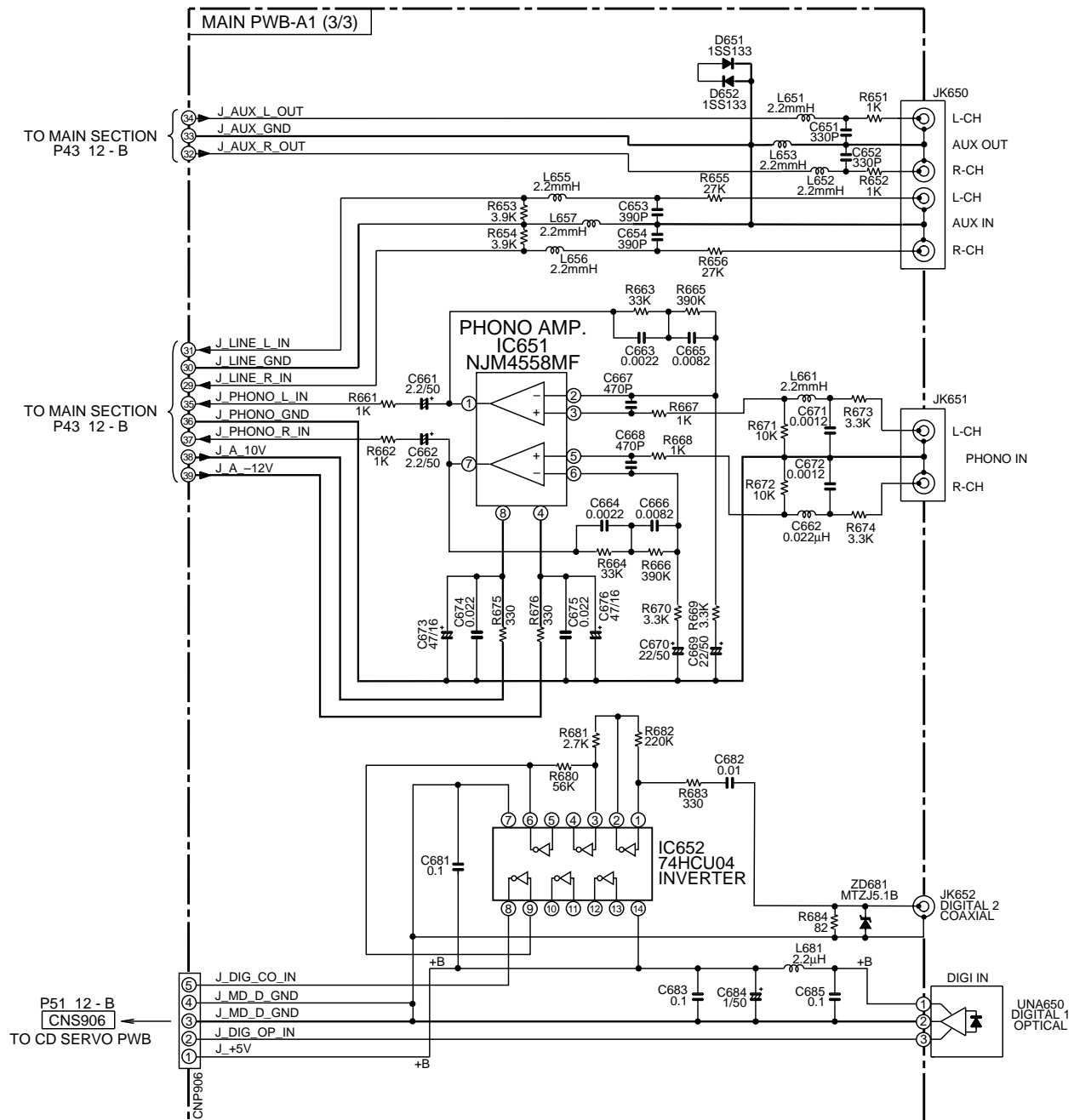


Figure 52 SCHEMATIC DIAGRAM (13/16)

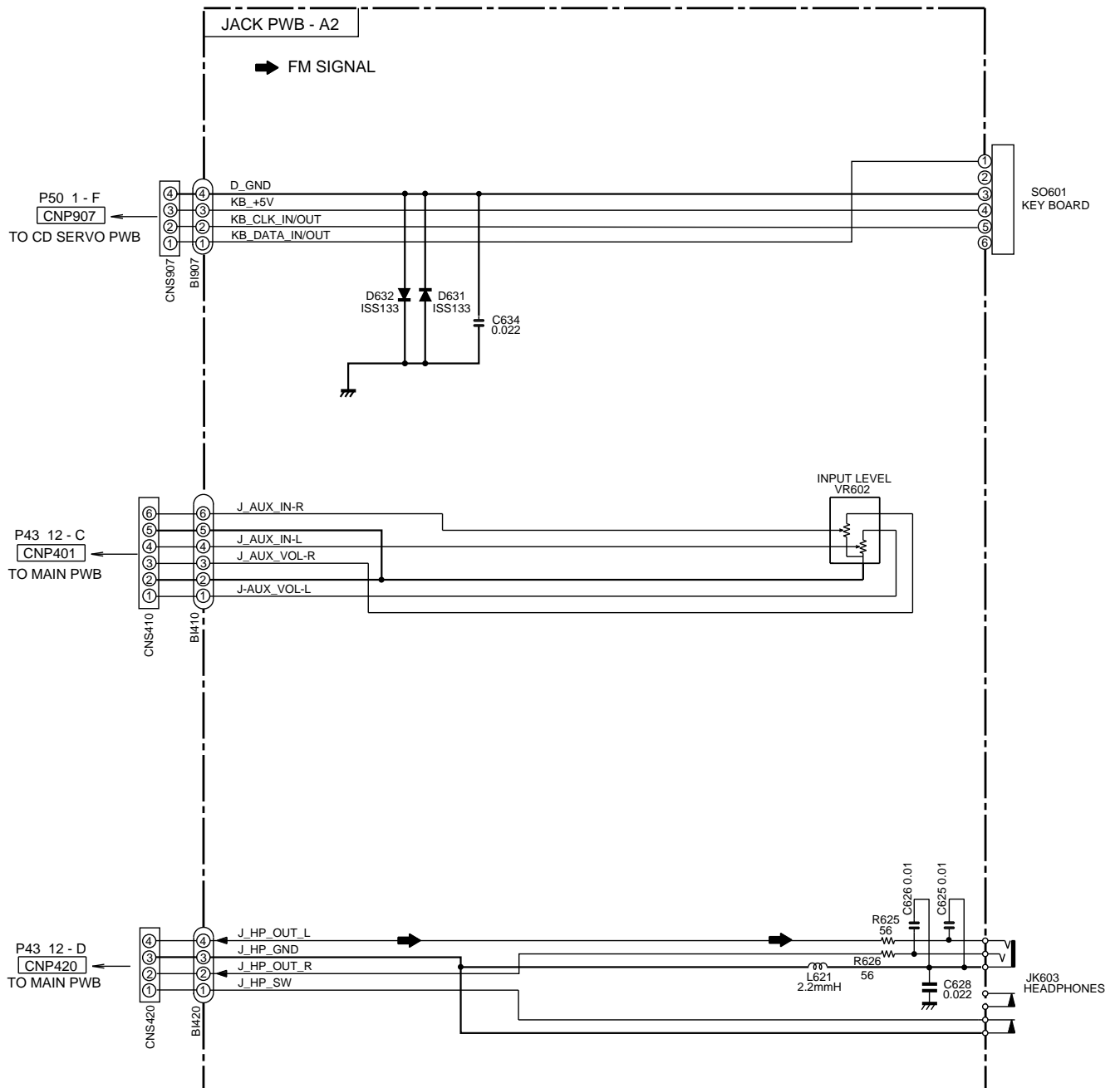


Figure 53 SCHEMATIC DIAGRAM (14/16)

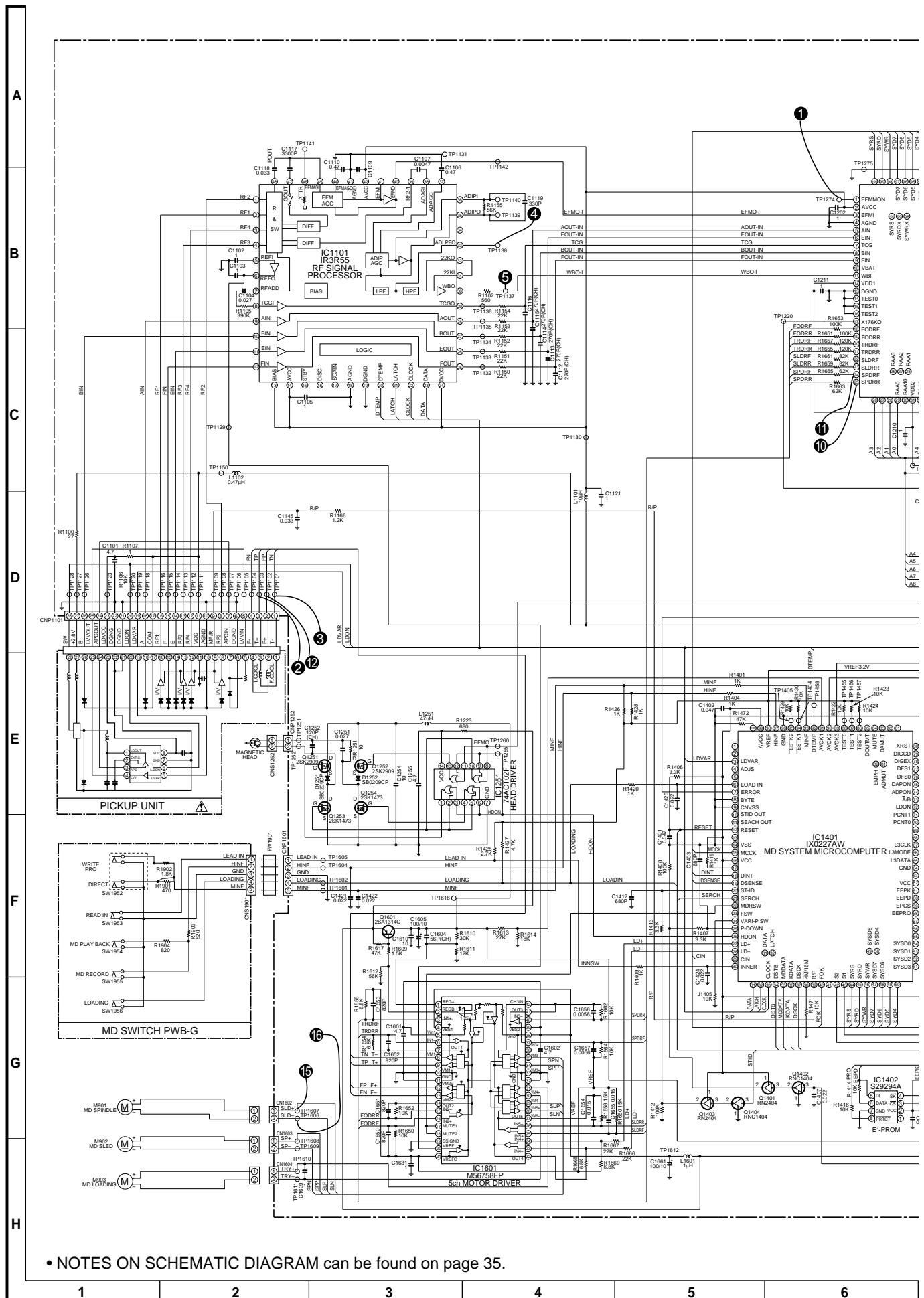
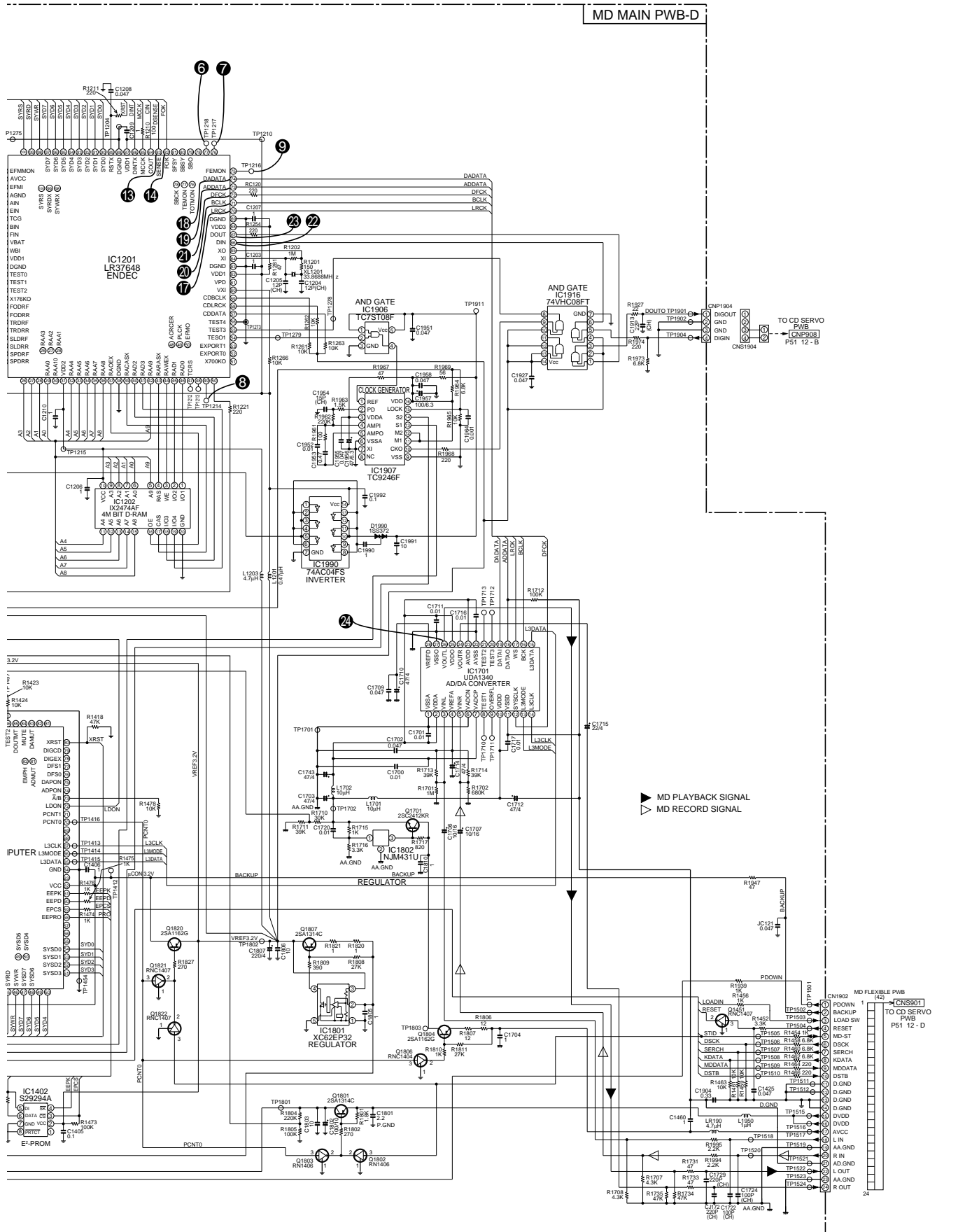


Figure 54 SCHEMATIC DIAGRAM (15/16)



• The numbers 1 to 24 are waveform numbers shown in page 67 and 68.

7	8	9	10	11	12
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Figure 55 SCHEMATIC DIAGRAM (16/16)

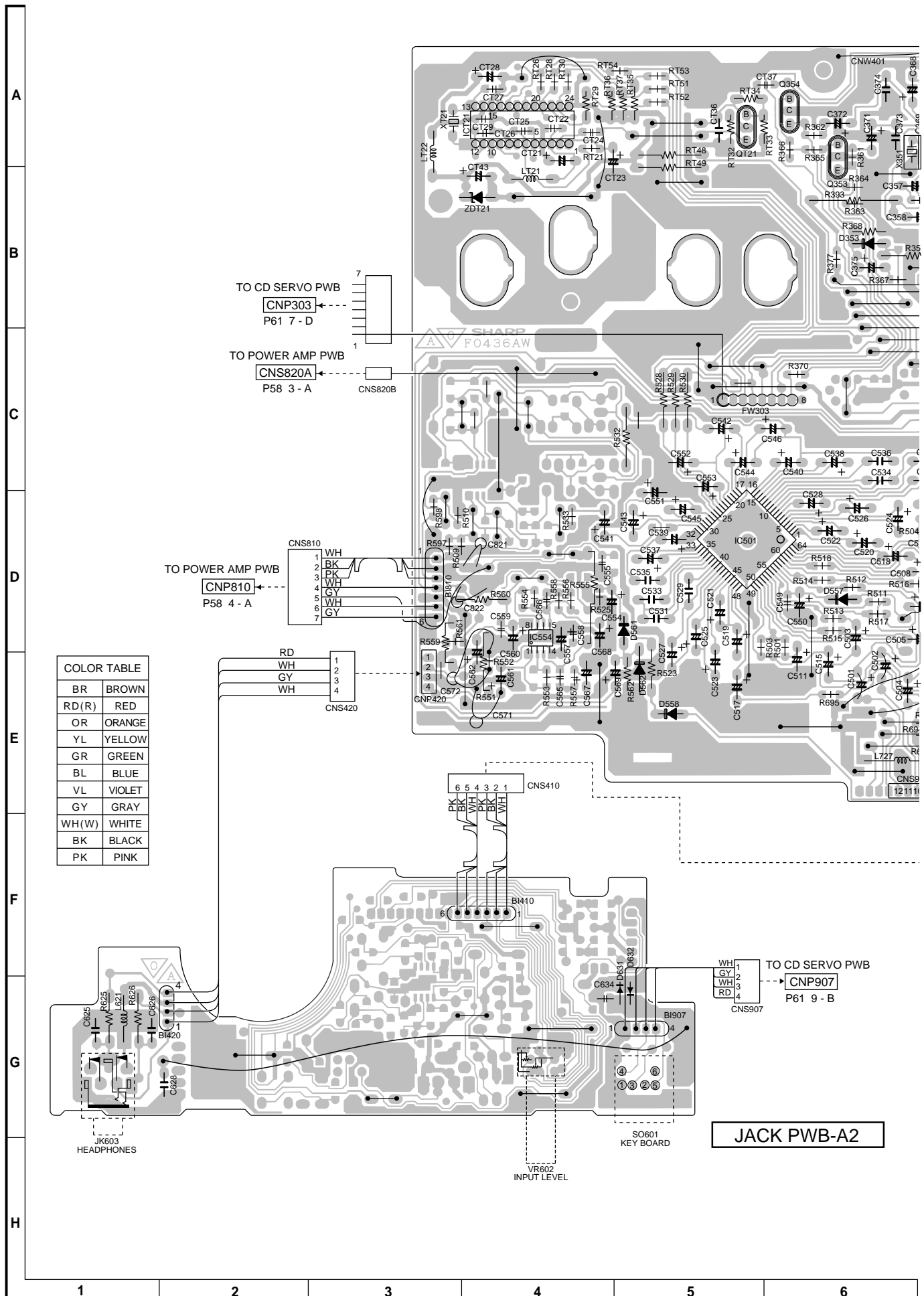


Figure 56 WIRING SIDE OF P.W.BOARD (1/9)

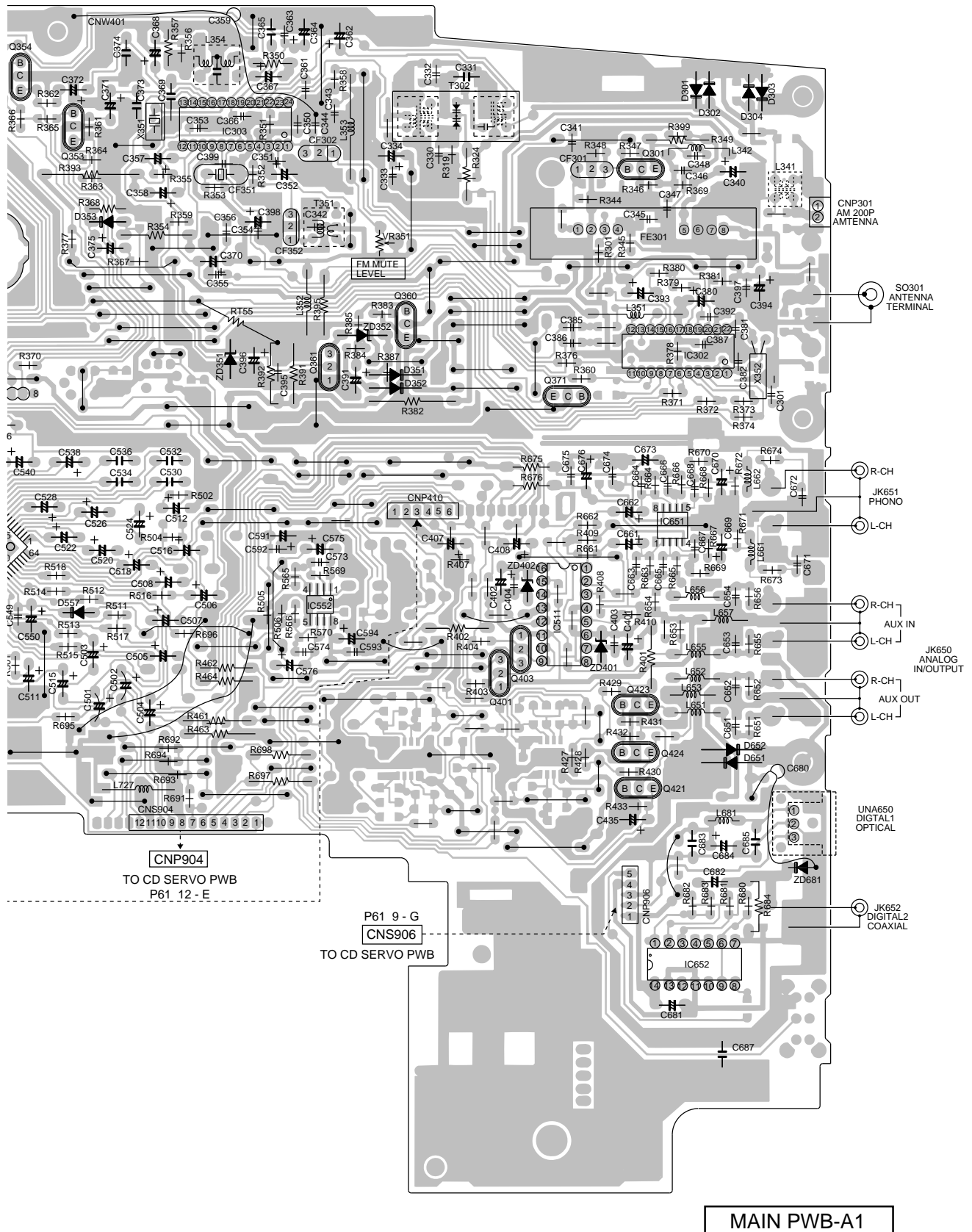


Figure 57 WIRING SIDE OF P.W.BOARD (2/9)

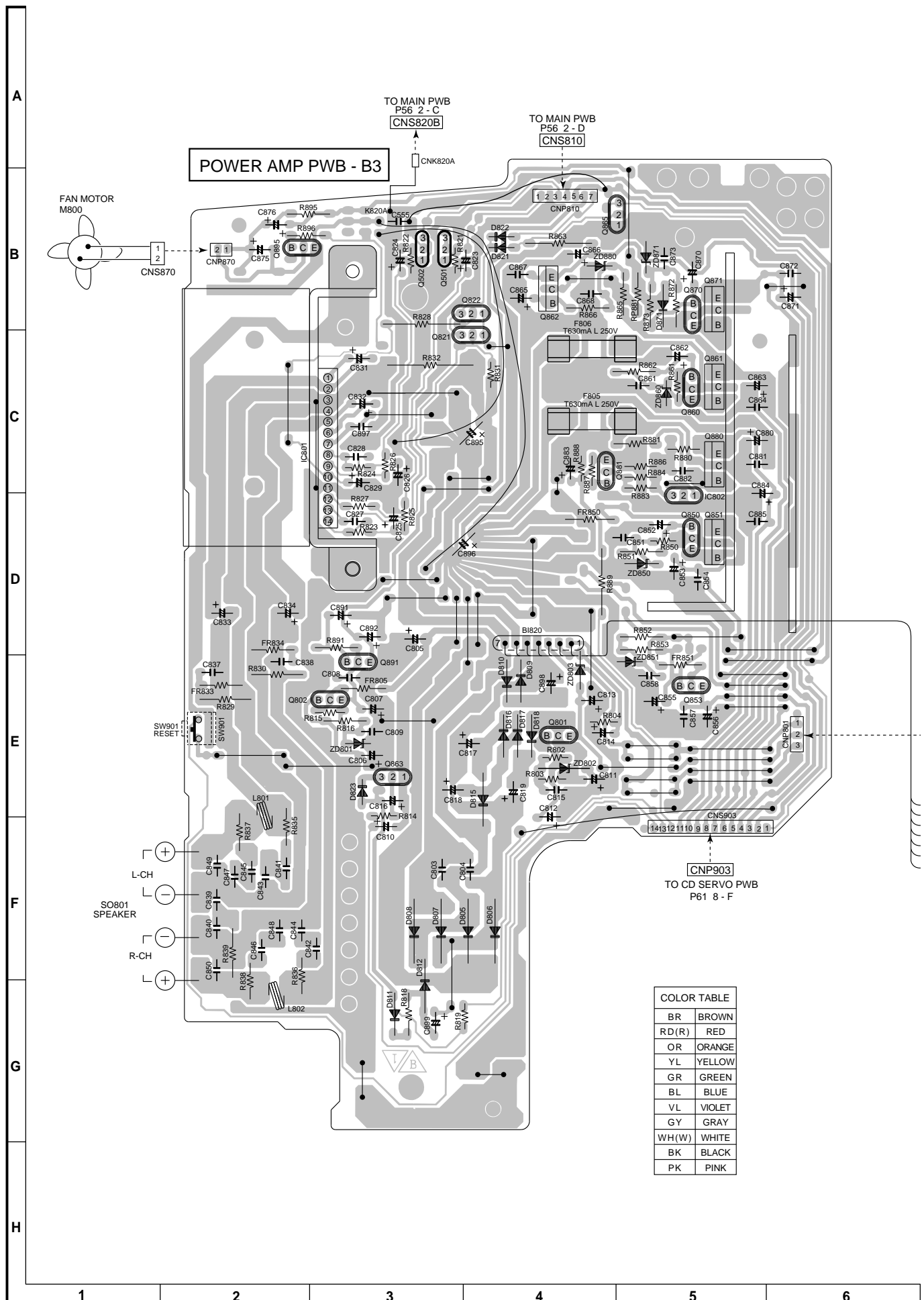


Figure 58 WIRING SIDE OF P.W.BOARD (3/9)

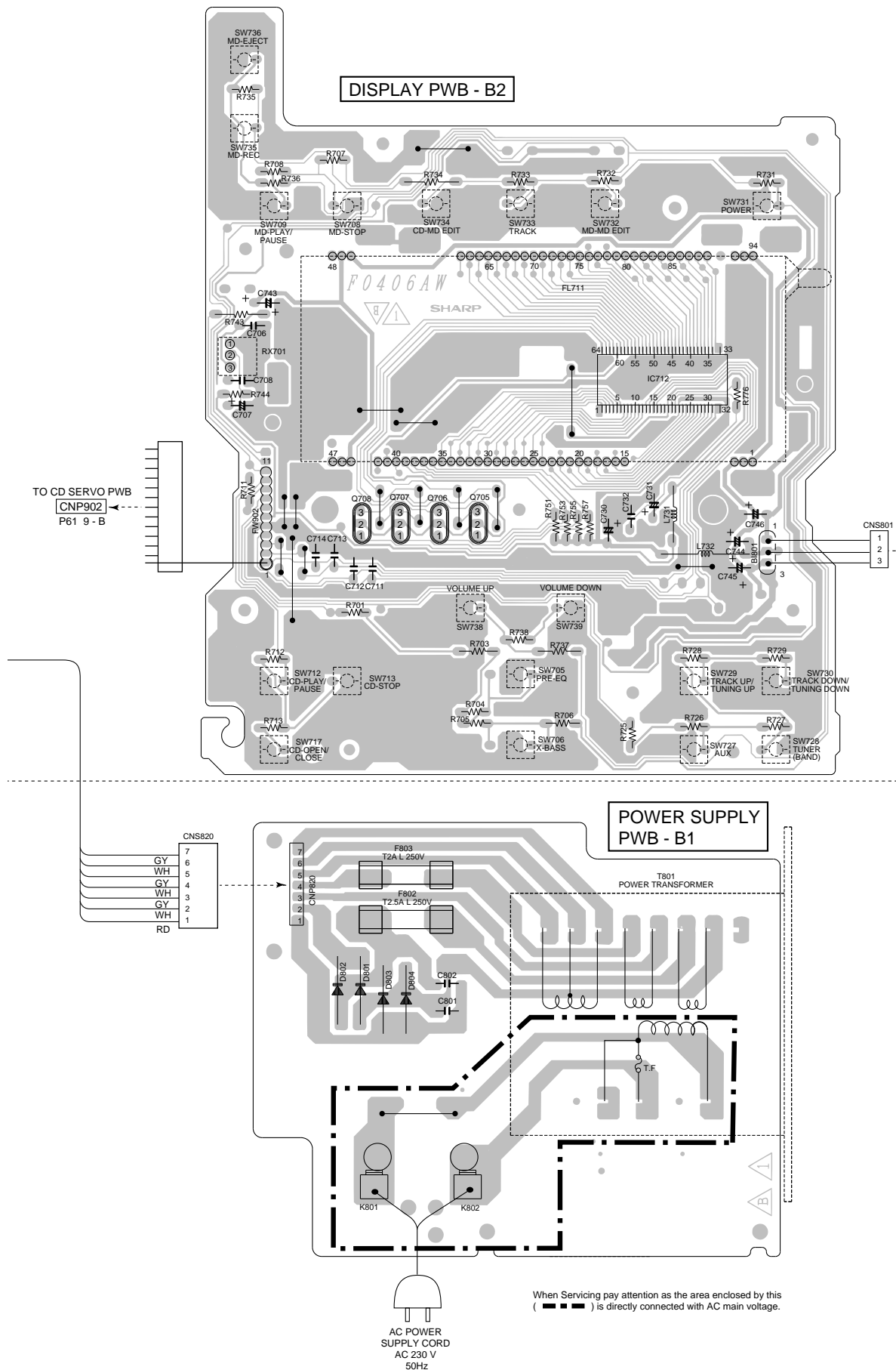
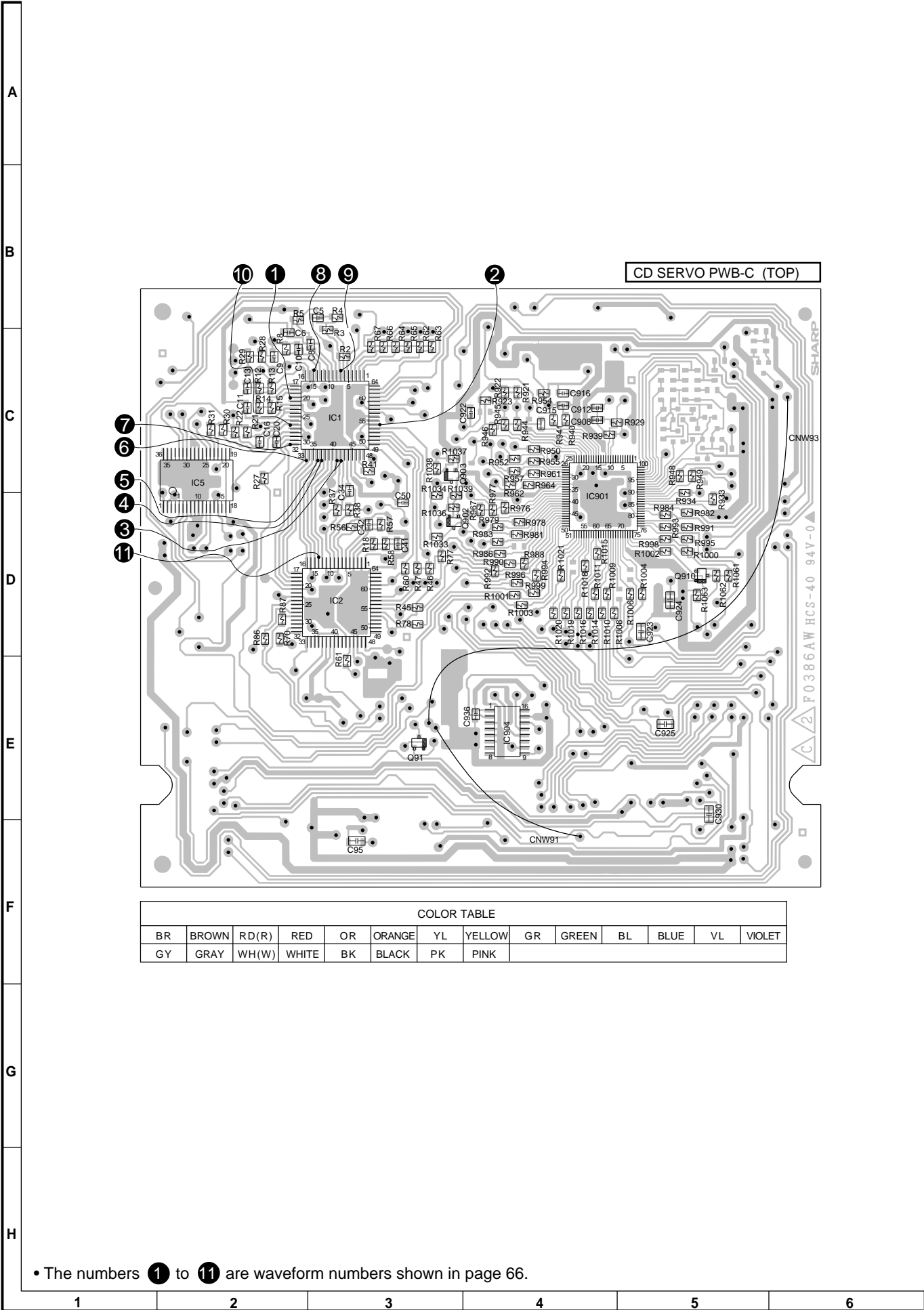


Figure 59 WIRING SIDE OF P.W.BOARD (4/9)



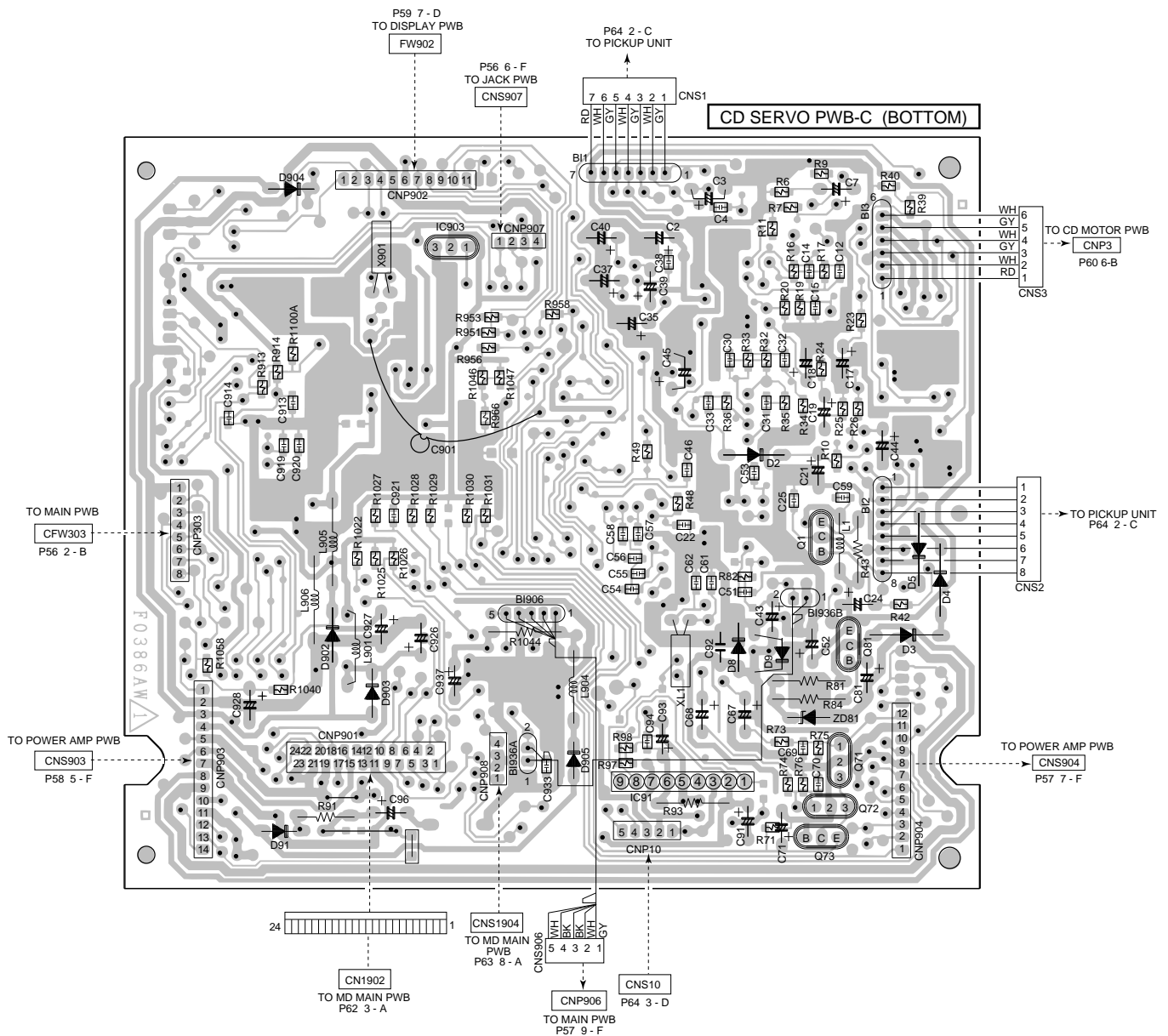


Figure 61 WIRING SIDE OF P.W.BOARD (6/9)

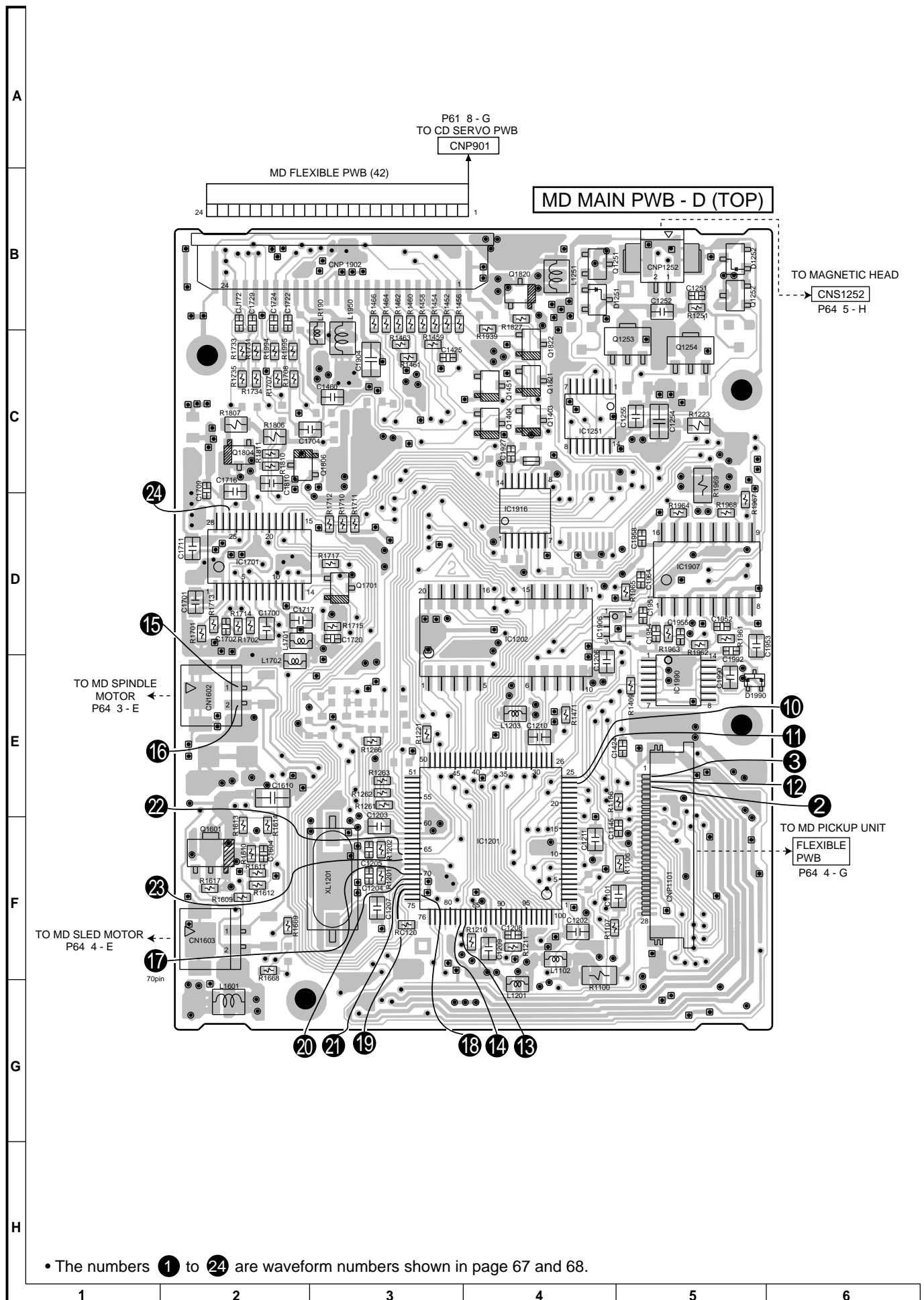


Figure 62 WIRING SIDE OF P.W.BOARD (7/9)

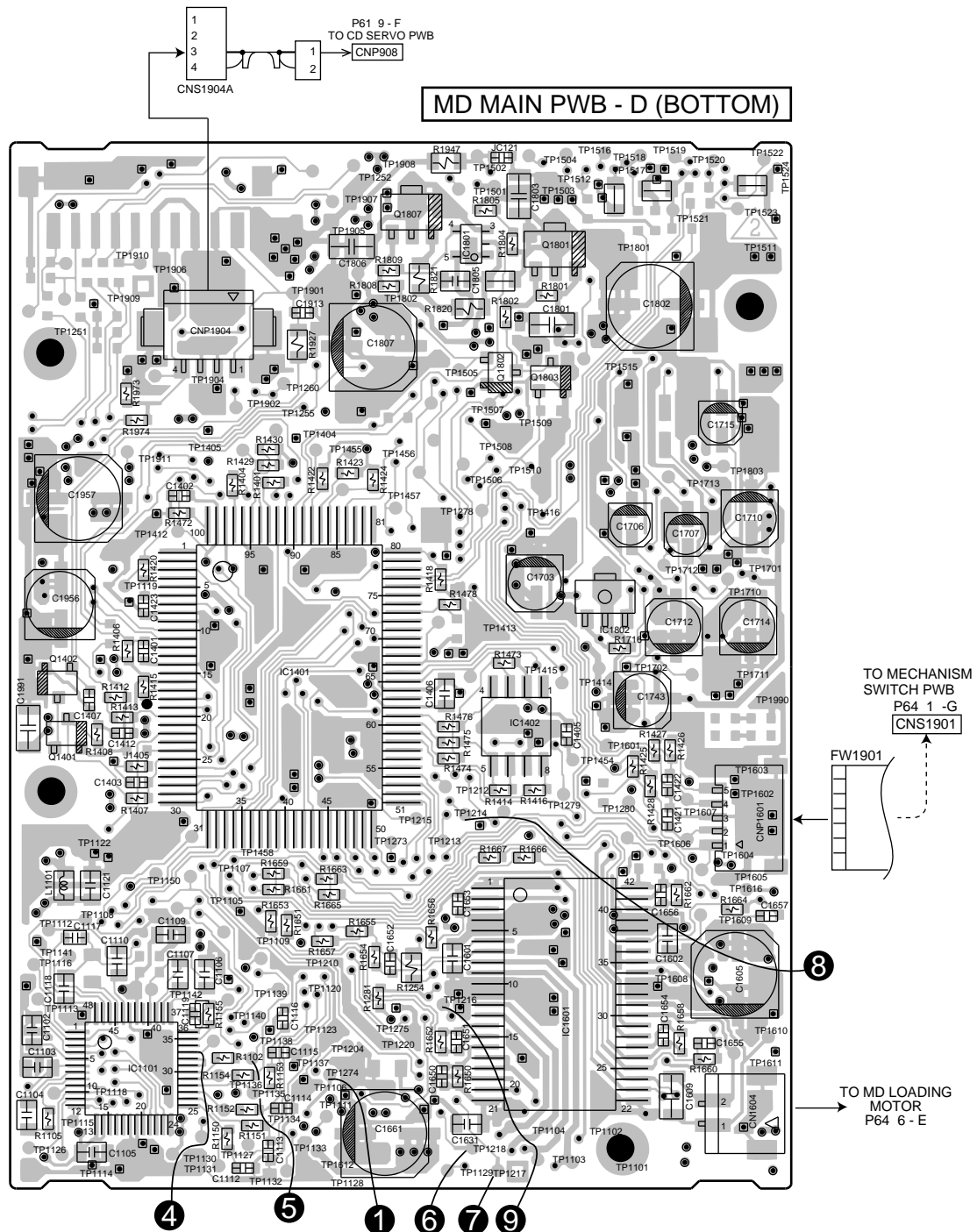


Figure 63 WIRING SIDE OF P.W.BOARD (8/9)

MD-X5H/CP-X5H

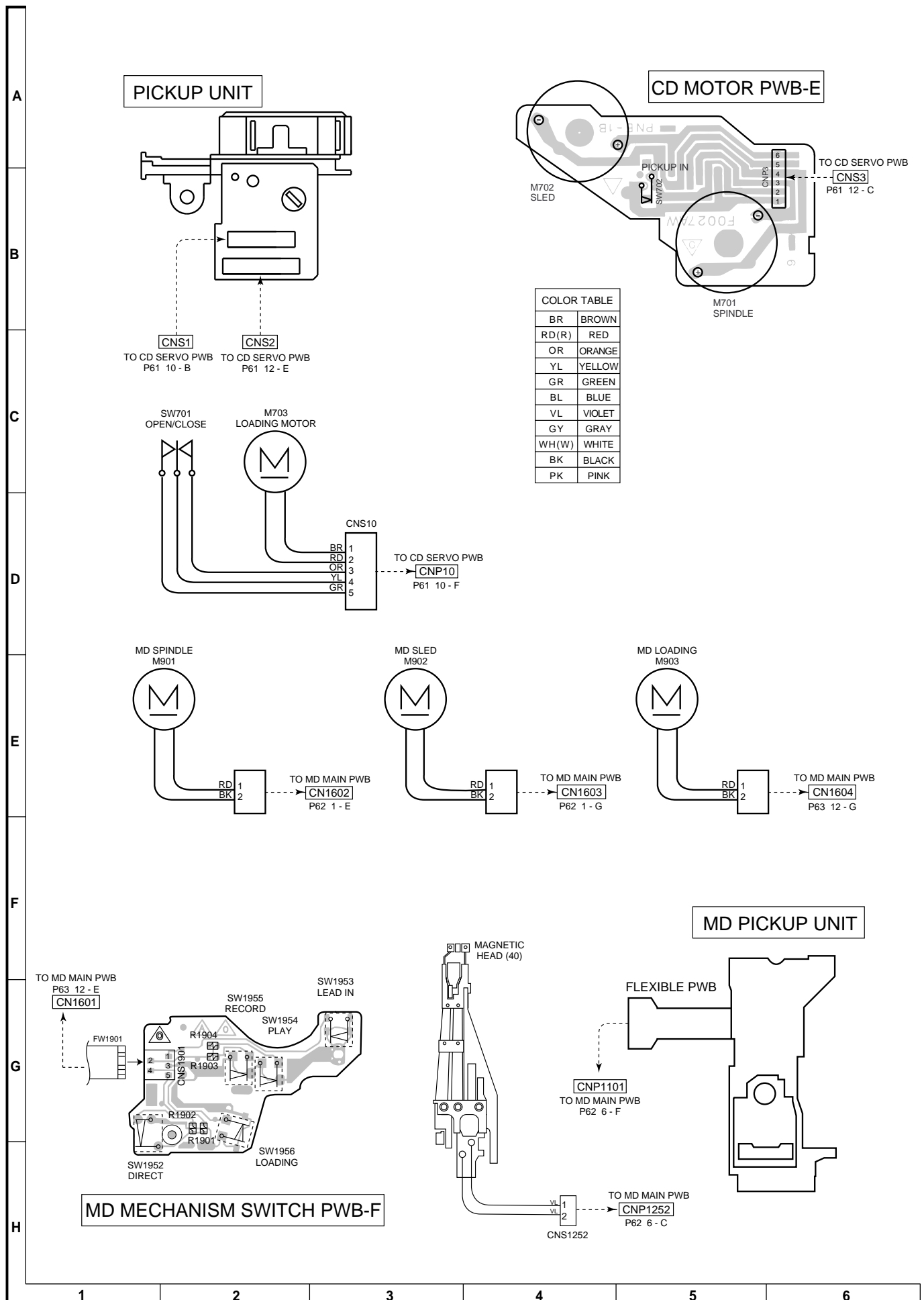


Figure 64 WIRING SIDE OF P.W.BOARD (9/9)

VOLTAGE (MD MAIN PWB)

Q1801	
PIN NO.	VOLTAGE
E	5V
C	5V
B	43V

Q1802	
PIN NO.	VOLTAGE
E	0V
C	0V
B	0.15V

Q1803	
PIN NO.	VOLTAGE
E	0V
C	0V
B	3.1V

Q1807	
PIN NO.	VOLTAGE
E	3.95V
C	3.2V
B	3.3V

Q1820	
PIN NO.	VOLTAGE
E	3.2V
C	3.18V
B	2.4V

Q1821	
PIN NO.	VOLTAGE
E	0V
C	0V
B	3.08V

Q1822	
PIN NO.	VOLTAGE
E	0V
C	0V
B	0.1V

Q1451	
PIN NO.	VOLTAGE
E	0V
C	3.18V
B	0.1V

Q1401	
PIN NO.	VOLTAGE
E	3.2V
C	3.2V
B	0V

Q1402	
PIN NO.	VOLTAGE
E	0V
C	0V
B	2.3V

Q1403	
PIN NO.	VOLTAGE
E	3.18V
C	0V
B	3.15V

Q1404	
PIN NO.	VOLTAGE
E	0V
C	3.15V
B	2.1V

Q1601	
PIN NO.	VOLTAGE
E	5.45V
C	4.4V
B	4.8V

IC1801	
PIN NO.	VOLTAGE
1	0V
2	44V
3	3.2V
4	3.1V
5	0V

IC1901	
PIN NO.	VOLTAGE
1	5.5V
2	1.6V
3	0V
4	2.8V
5	5.5V

IC1907	
PIN NO.	VOLTAGE
1	2.8V
2	2.6V
3	4.9V
4	2.6V
5	1.6V
6	0V
7	0V
8	4.9V
9	0V
10	2.2V
11	5V
12	5V
13	0V
14	3.2V
15	3.1V
16	5V

IC1990	
PIN NO.	VOLTAGE
1	1.45V
2	1.7V
3	1.45V
4	1.7V
5	1.45V
6	1.7V
7	0V
8	1.7V
9	1.45V
10	1.37V
11	1.7V
12	1.37V
13	1.7V
14	3.17V

IC1101	
PIN NO.	VOLTAGE
1	0.7V
2	0.7V
3	0.7V
4	0.7V
5	1.6V
6	1.6V
7	0.7V
8	1.6V
9	1.6V
10	1.6V
11	1.6V
12	1.6V
13	3.2V
14	3.2V
15	0V
16	Groove:3.2V Pit:0V
17	Low reflection:0V High reflection:3.2V
18	0V
19	0V
20	1.45V
21	3.2V
22	0V
23	0V
24	3.2V
25	1.78V
26	1.78V
27	1.35V
28	1.36V
29	1.6V
30	1.6V
31	1.6V
32	1.6V
33	1.6V
34	0V
35	1.6V
36	1.6V
37	0.3V
38	1.6V
39	1.6V
40	1.6V
41	1.6V
42	3.2V
43	0V
44	1V
45	1.6V
46	1.6V
47	0.7V
48	0.7V

IC1202	
PIN NO.	VOLTAGE
1	1.1V
2	1.1V
3	3V
4	2V
5	1.5V
6	1.8V
7	0.8V
8	2.4V
9	1.2V
10	3.2V
11	1.2V
12	2.5V
13	1.3V
14	1.7V
15	1.3V
16	2.2V
17	2.4V
18	1.2V
19	1.1V
20	0V

IC1201	
PIN NO.	VOLTAGE
1	1.48V
2	0V
3	1.6V
4	0V
5	1.36V
6	1.77V
7	1.6V
8	1.36V
9	1.77V
10	1.25V
11	1.6V
12	3.17V
13	0V
14	0V
15	0V
16	0V
17	1.45V
18	1.56V
19	1.62V
20	1.7V
21	1.5V
22	1.63V
23	1.53V
24	1.8V
25	1.4V
26	1.2V
27	2.5V
28	0.8V
29	1.8V
30	1.4V
31	3.2V
32	1.2V
33	2.5V
34	1.3V
35	1.7V
36	1.3V
37	2.2V
38	0V
39	2.4V
40	1.2V
41	1.1V
42	1.5V
43	2V
44	3V
45	1.1V
46	1.1V
47	0V
48	3V
49	1.56V
50	PLAY:0V REC:1.5V
51	58V
52	0V
53	0V
54	58V
55	0V
56	0V
57	3.2V
58	3.2V
59	3.2V
60	3.17V
61	0V
62	3.17V
63	0V
64	1.3V
65	1.3V
66	DC input:1.58V Other:0V
67	1.58V
68	3.17V
69	0V
70	1.5V
71	1.55V
72	1.5V
73	0V
74	1V
75	1.55V
76	1.8V
77	1.56V
78	0V
79	0V
80	3.16V
81	0V
82	0V
83	0V
84	1.5V
85	1.5V
86	3.1V
87	3.17V
88	0V
89	3.17V
90	0.5V
91	0.6V
92	0.4V
93	0.4V
94	0.4V
95	0.9V
96	0.7V
97	0.8V
98	3.16V
99	3.15V
100	0V

IC1401	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0.2V
4	3.2V
5	0V
6	0V
7	3.1V
8	0V
9	0V
10	0V
11	0V
12	3.18V
13	144V
14	0V
15	1.5V
16	3.2V
17	3.2V
18	3.1V
19	0V
20	0V
21	0V
22	3.15V
23	3.2V
24	0V
25	3.2V
26	3.2V
27	0V
28	0V
29	2V
30	3.2V
31	0V
32	3.2V
33	0V
34	0.8V
35	2.2V
36	0.2V
37	2.3V
38	0V
39	PLAY:3.15V REC:0V
40	0V
41	0V
42	0V
43	3.2V
44	0V
45	0V
46	3.15V
47	0V
48	0V
49	0V
50	0V
51	0V
52	0V
53	0V
54	0V
55	0V
56	0V
57	0V
58	0V
59	3.2V
60	0V
61	3.2V
62	3.2V
63	0V
64	0V
65	3.2V
66	3.2V
67	3.2V
68	0V
69	0V
70	3.1V
71	0V
72	3.1V
73	97A:0V 97B:3.2V
74	0V
75	3.2V
76	3.2V
77	0V
78	0V
79	0V
80	3.15V
81	0V
82	0V
83	3.2V
84	3.2V
85	3.2V
86	3.2V
87	3.2V
88	3.2V
89	1.7V
90	1.8V
91	1.8V
92	1.4V
93	Low reflection:2.2V High reflection:0.1V
94	3.2V
95	3.2V
96	0V
97	2V
98	3.2V
99	3.2V
100	0V

IC1601	
PIN NO.	VOLTAGE
1	1.25V
2	4V
3	1.5V
4	5.5V
5	5.5V
6	1.5V
7	5V
8	2.7V
9	2.8V
10	0V
11	0V
12	2.7V
13	2.76V
14	1.6V
15	1.6V
16	1.6V
17	3.15V
18	3.15V
19	0V
20	1.6V
21	1.6V
22	1.6V
23	1.23V
24	1.23V
25	1.6V
26	1.8V
27	1.62V
28	2.7V
29	2.8V
30	2.7V
31	2.7V
32	0V
33	0V
34	3.0V
35	2.4V
36	0V
37	1.64V
38	5.5V
39	5.5V
40	1.64V
41	1.68V
42	1.68V

IC1251	
PIN NO.	VOLTAGE
1	2.6V
2	2.6V
3	0.1V
4	2.6V
5	2.6V
6	0.1V
7	0V
8	1.56V
9	0.1V
10	2.6V
11	1.56V
12	0.1V
13	2.6V
14	5.2V

Q1251	
PIN NO.	VOLTAGE
D	4.4V
S	1.4V
G	2.6V

Q1252	
PIN NO.	VOLTAGE
D	4.4V
S	1.4V
G	2.6V

Q1253	
PIN NO.	VOLTAGE
D	15V
S	0V
G	2.6V

Q1254	
PIN NO.	VOLTAGE
D	15V
S	0V
G	2.6V

IC1916	
PIN NO.	VOLTAGE
1	1.58V
2	3.2V
3	1.58V
4	3.2V
5	DC input:2.2V Other:0V
6	DC input:1.58V Other:0V
7	1.55V
8	2.2V
9	3.2V
10	3.2V
11	97A:3.2V 97B:1V
12	97A:3.2V 97A:0.9V

Q1804	
PIN NO.	VOLTAGE
E	5.4V
C	5.4V
B	4.8V

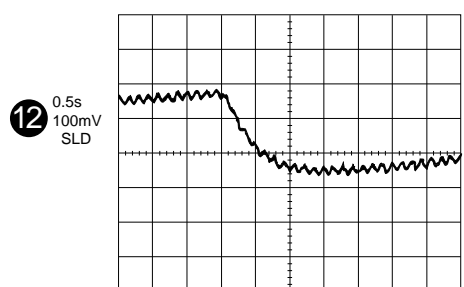
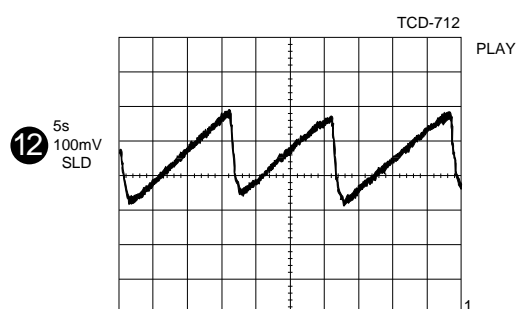
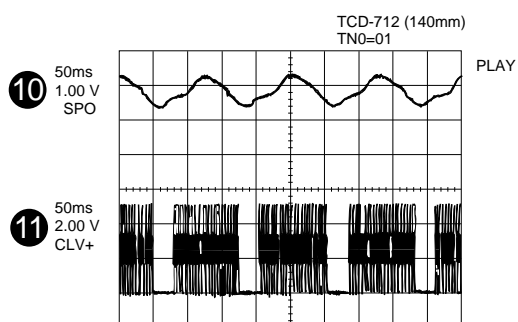
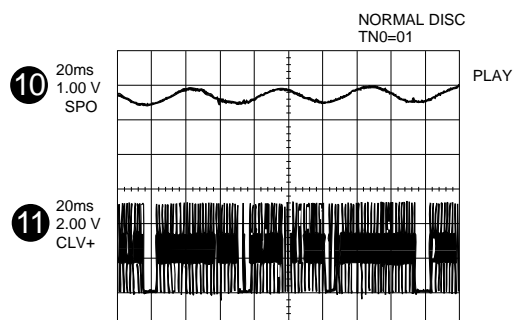
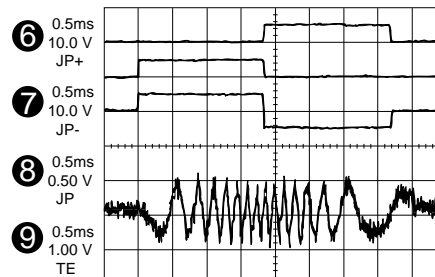
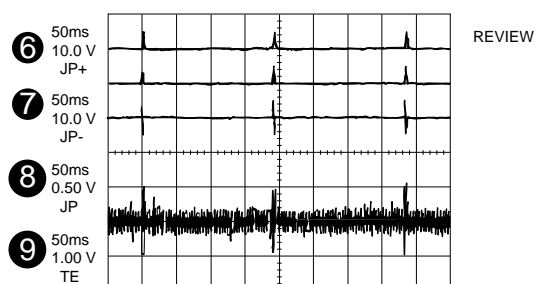
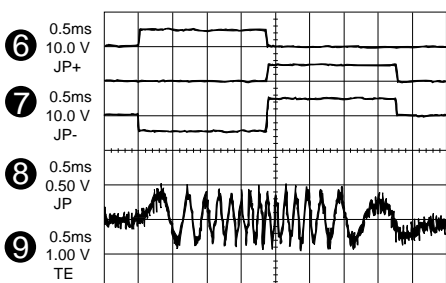
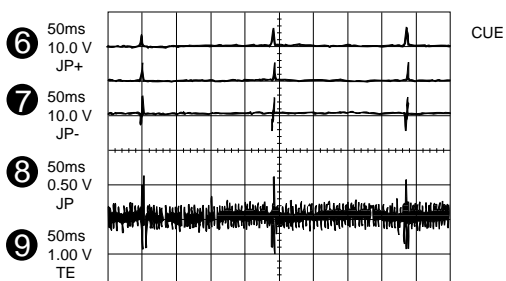
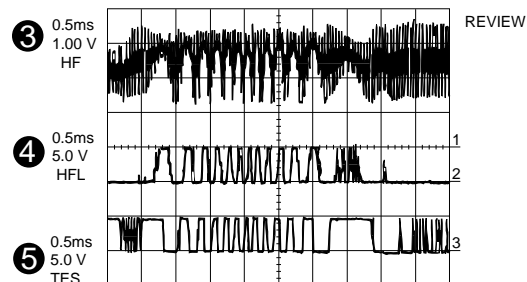
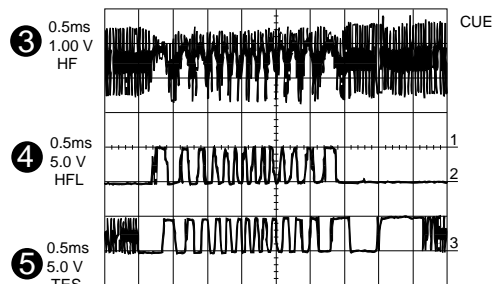
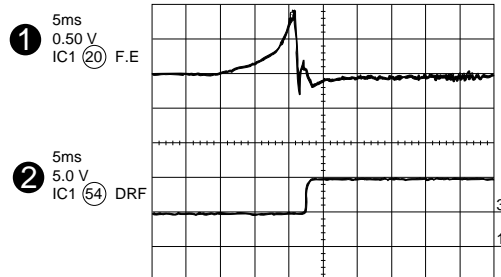
Q1805	
PIN NO.	VOLTAGE
E	0V
C	0.7V
B	3.1V

Q1701	
PIN NO.	VOLTAGE
E	3.2V
C	5.4V
B	3.85V

IC1802	
PIN NO.	VOLTAGE
1	2.46V
2	0V
3	3.85V

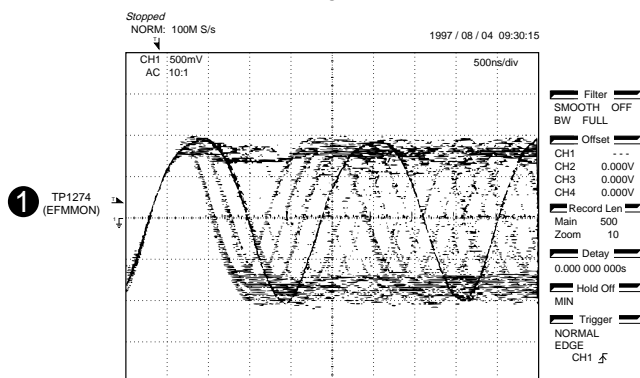
IC1701	
PIN NO.	VOLTAGE
1	0V
2	3.2V
3	1.4V
4	1.5V
5	1.4V
6	0V
7	3.2V
8	0V
9	0V
10	3.2V
11	0V
12	1.5V
13	3.17V
14	3.17V
15	3.17V
16	1.55V
17	3.17V
18	0V
19	1V
20	0V
21	0V
22	0V
23	3.2V
24	1.57V
25	3.2V
26	1.57V
27	0V
28	1.6V

WAVEFORMS OF CD CIRCUIT (CD SECTION)

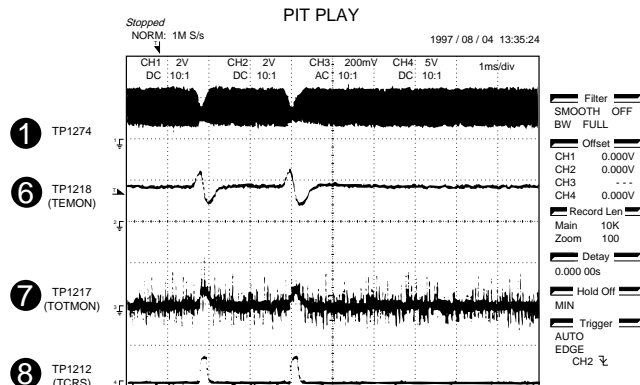
STOP → PLAY
FOCUS — SERCH

WAVEFORMS OF MD CIRCUIT (MD SECTION)

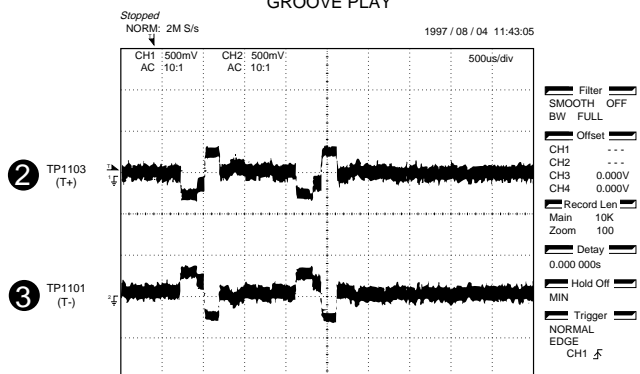
PLAY STATE



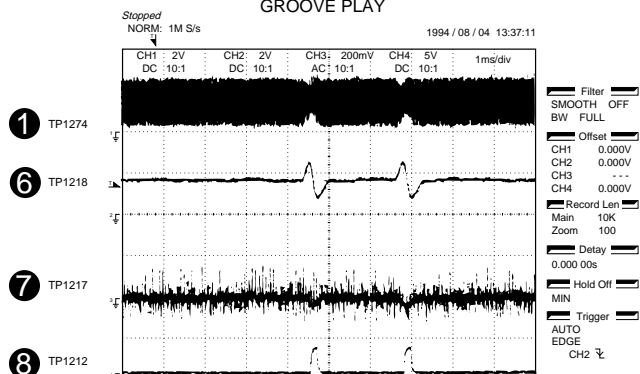
PIT PLAY



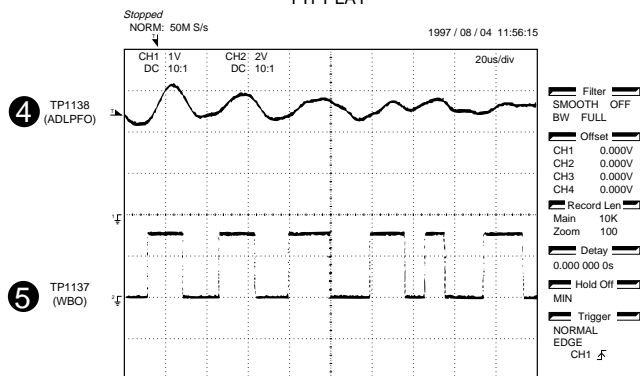
GROOVE PLAY



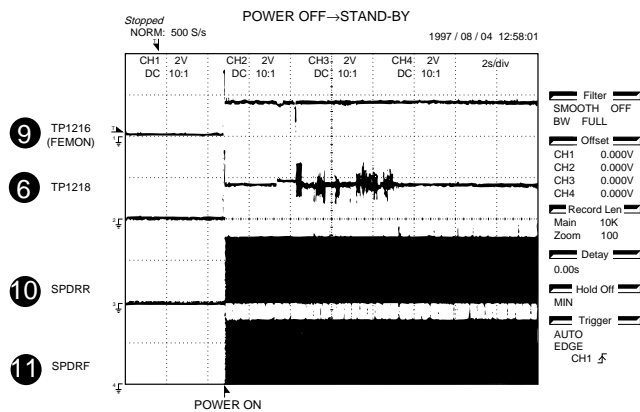
GROOVE PLAY



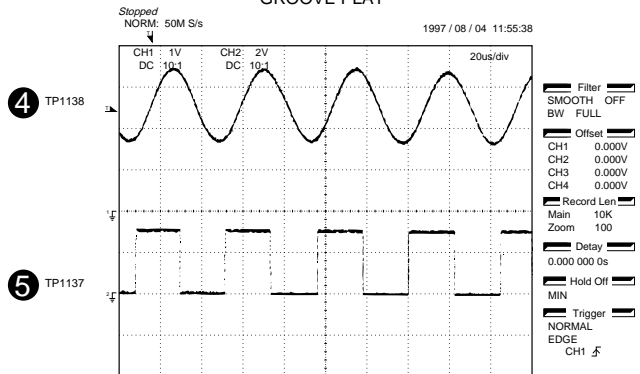
PIT PLAY



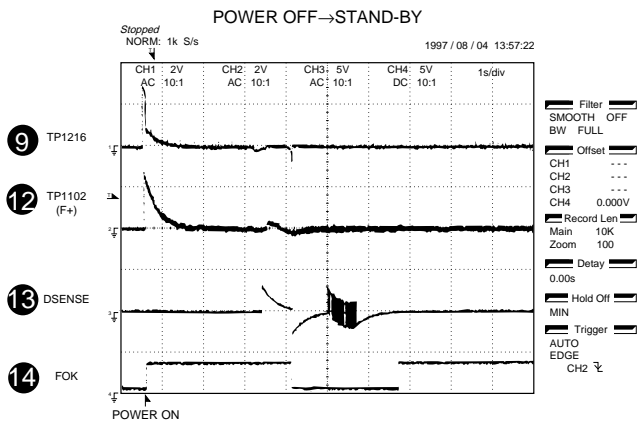
POWER OFF→STAND-BY



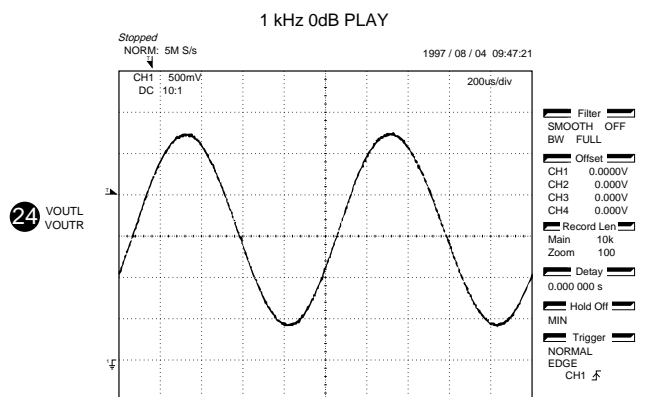
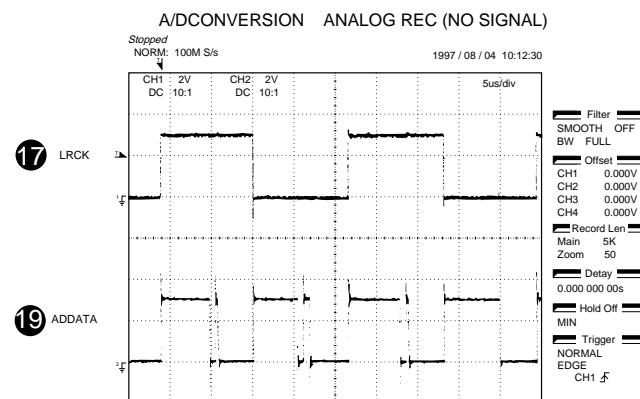
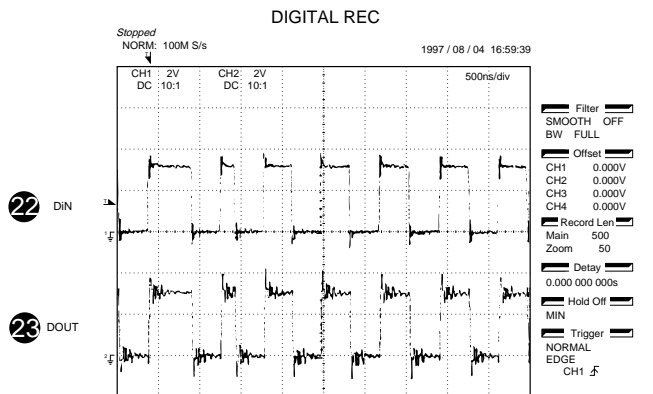
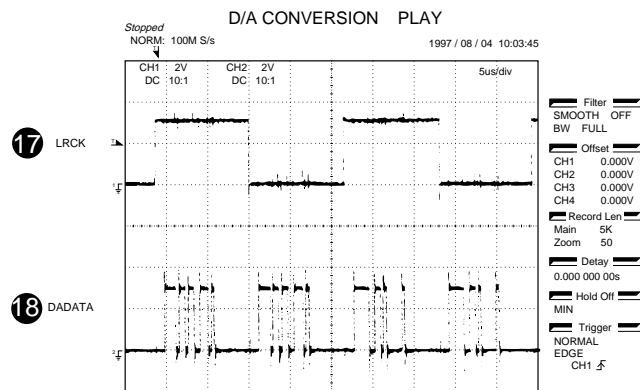
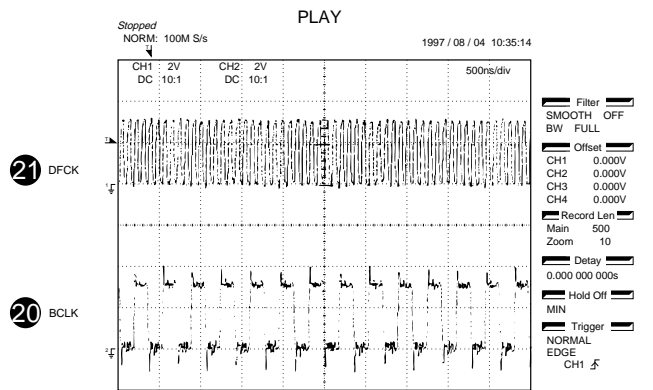
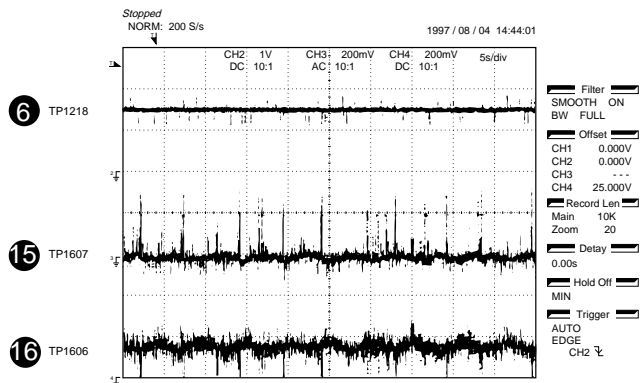
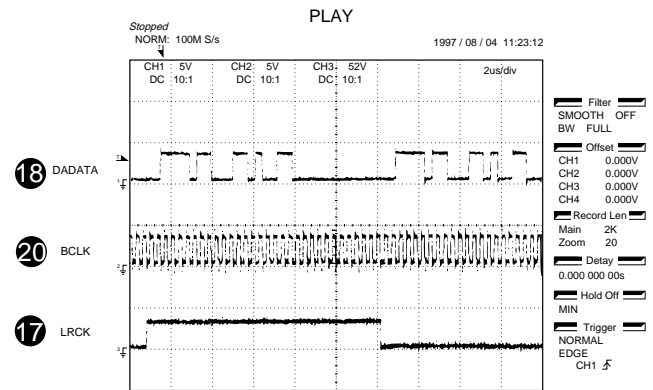
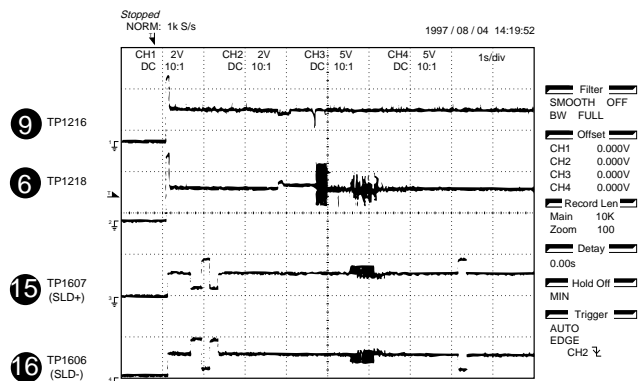
GROOVE PLAY



POWER OFF→STAND-BY



MD-X5H/CP-X5H



TROUBLESHOOTING (CD SECTION)

When the CD does not function

When the CD section does not operate When the objective lens of the optical pickup is dirty, this section may not operate. Clean the objective lens, and check the playback operation. When this section does not operate even after the above step is taken, check the following items.

Remove the cabinet and follow the troubleshooting instructions.

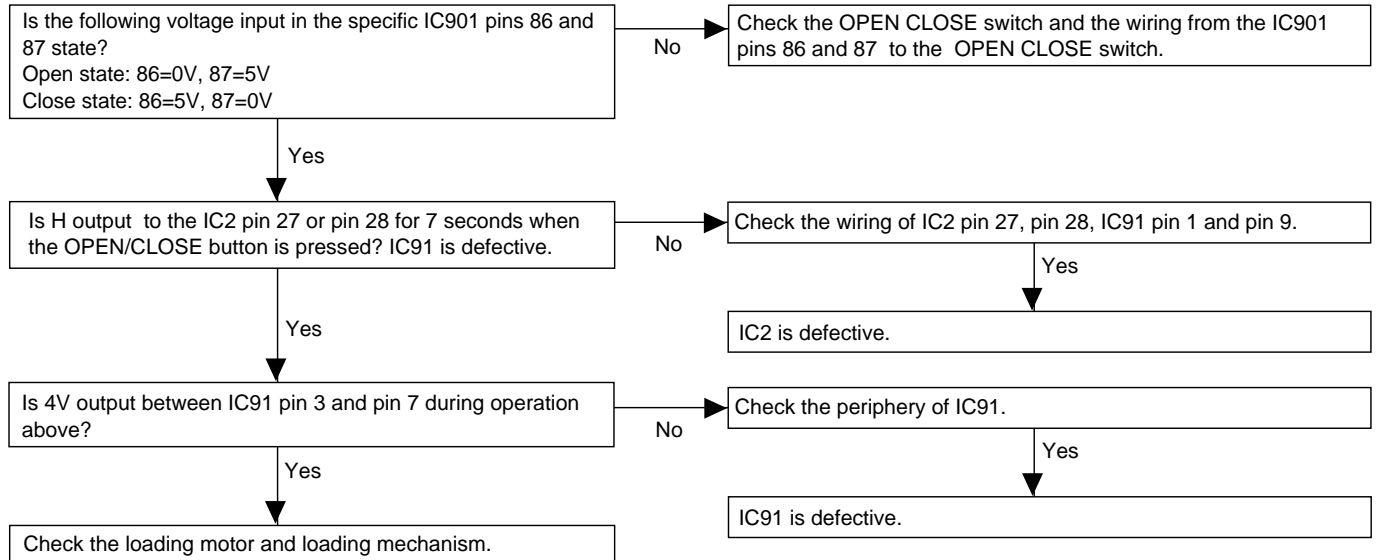
"Track skipping and/or no TOC (Table Of Contents) may be caused by build up of dust or other foreign matter on the laser pickup lens. Before attempting any adjustment make certain that the lens is clean. If not, clean it as mentioned below."

Turn the power off.

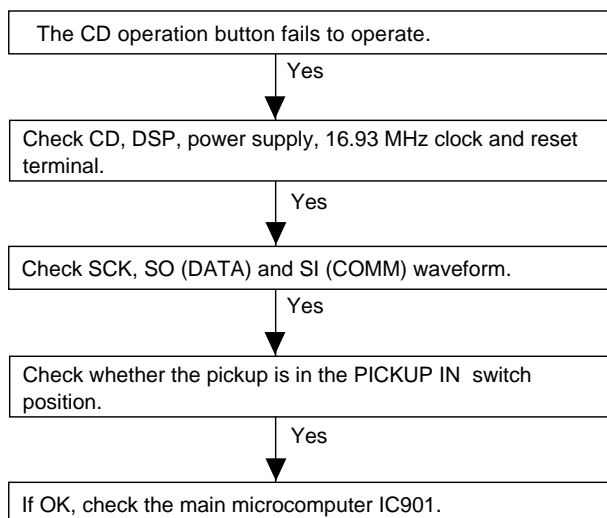
Gently clean the lens with a lens cleaning tissue and a small amount of isopropyl alcohol.

Do not touch the lens with the bare hand.

• The CD tray cannot be opened or closed.



• The CD function does not operate.



MD-X5H/CP-X5H

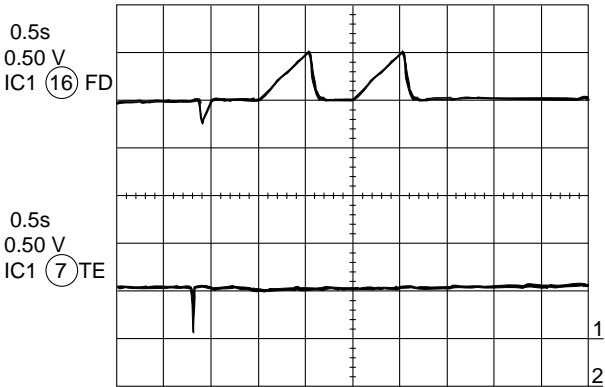
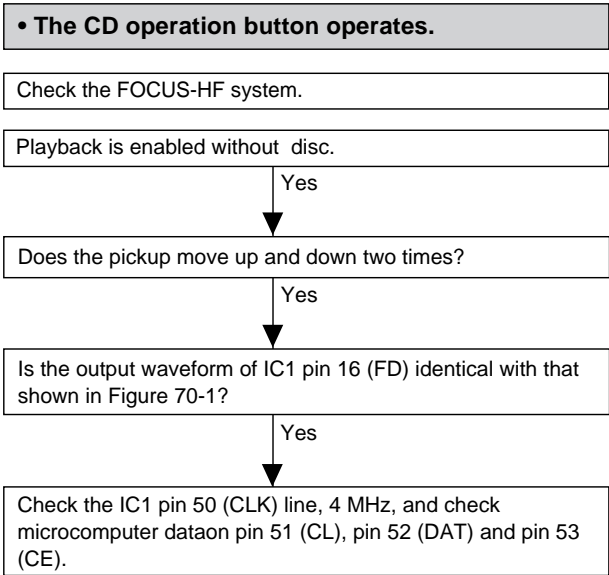


Figure 70-1

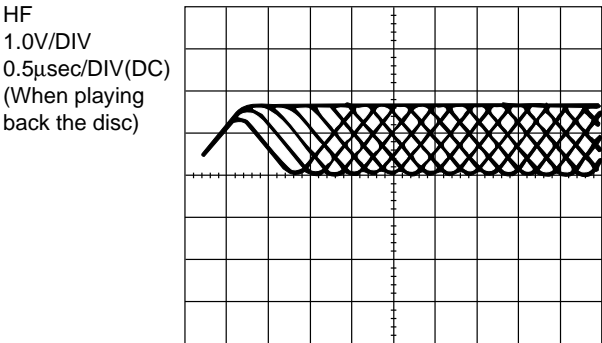
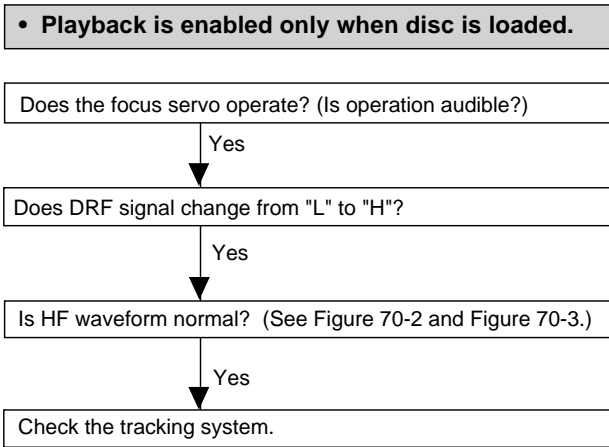


Figure 70-2

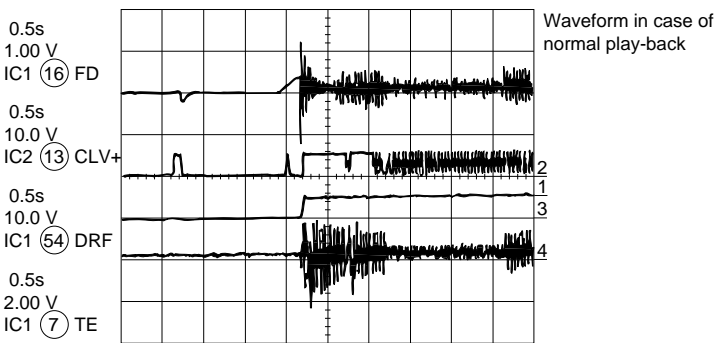


Figure 70-3

• Check the tracking system.

Check the waveform of IC1 pin 7 (TE).

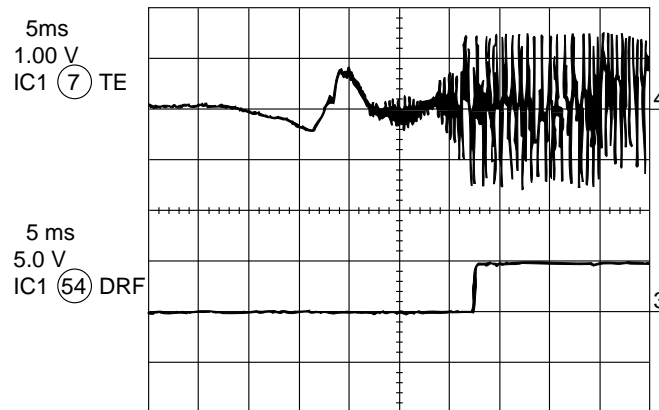
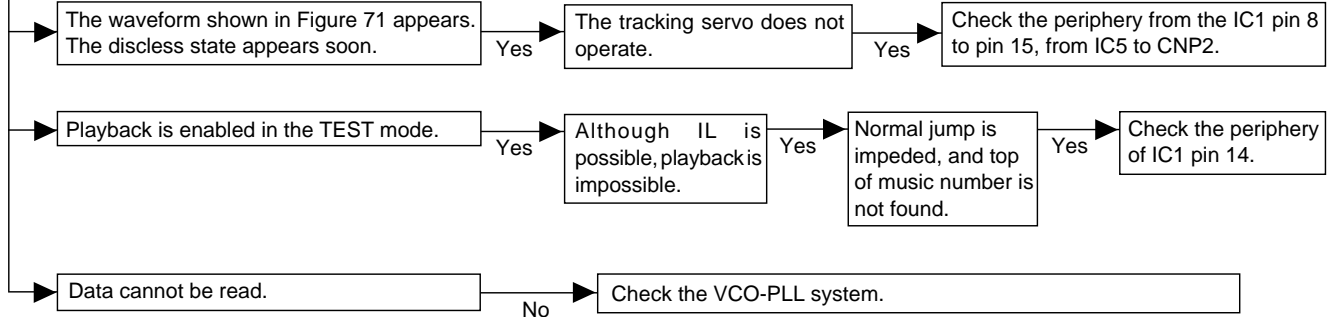
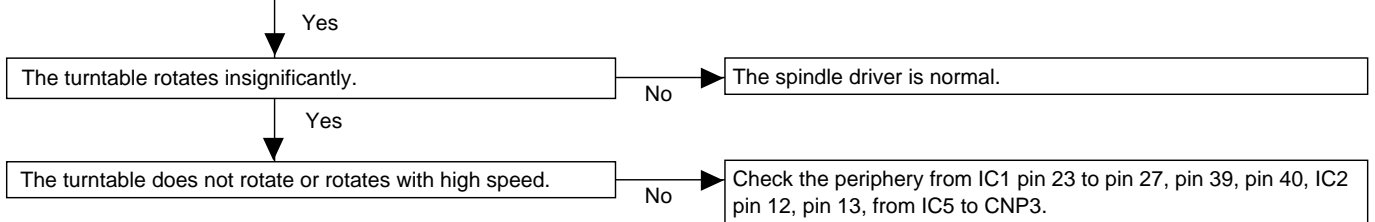


Figure 71

• Check the spindle system

Playback operation is done without disc.



MD-X5H/CP-X5H

• Check the VCO-PLL system.

Playback operation is performed when disc exists.

Yes

Although the HF waveform is normal, the TOC data cannot be read.

No

Check the PDD waveform. (Figure 72)

Abnormal

Check the IC1 pin 43, pin 44, IC2 pin 3, pin 5, pin 7, pin 10, and pin 11.

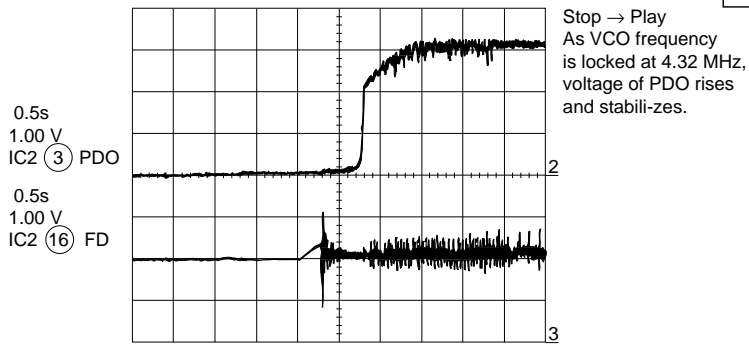


Figure 72

• The HF waveform is normal and time indication is also normal, but sound is not output.

Check the IC2 pin 48 (EFLG).

No

Usually, the number of pulses of normal disc is 100 pulses/sec or less.

Yes

Check the IC2 pin 37 and pin 40.

Yes

Check IC401 and power amplifier IC801.

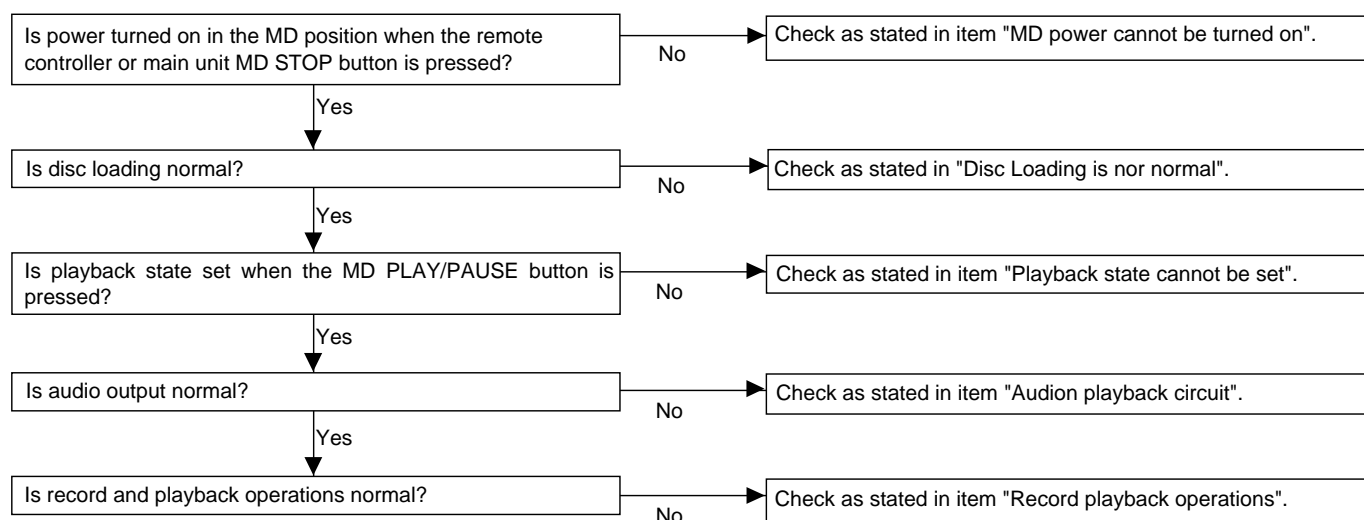
TROUBLE SHOOTING (MD SECTION)

When MD fails to operate

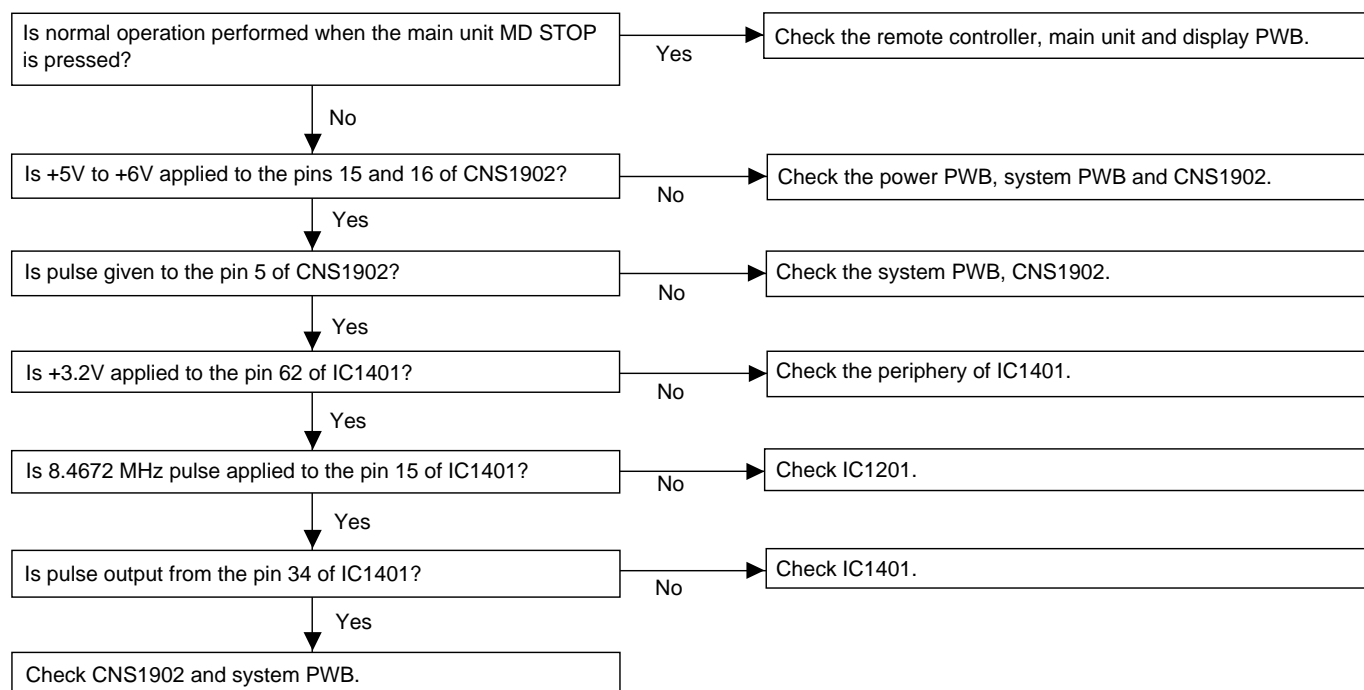
If the objective lens of optical pickup is contaminated, MD may fail to operate. At first, clean the objective lens to check playback operation. If MD fails persistently to operate, perform checks as follows.

If dust or foreign substance is accumulated on the pickup lens, playback is disturbed and indication of TOC (content of tracks) may be disabled. Before adjusting check that the lens is clean. If the lens is contaminated, treat it as follows.

Turn off power supply, impregnate the lens cleaning paper with a small quantity of isopropyl alcohol, and gently wipe the lens with it with due care so that the lens is not damaged. At this time do not touch the lens directly with your finger.

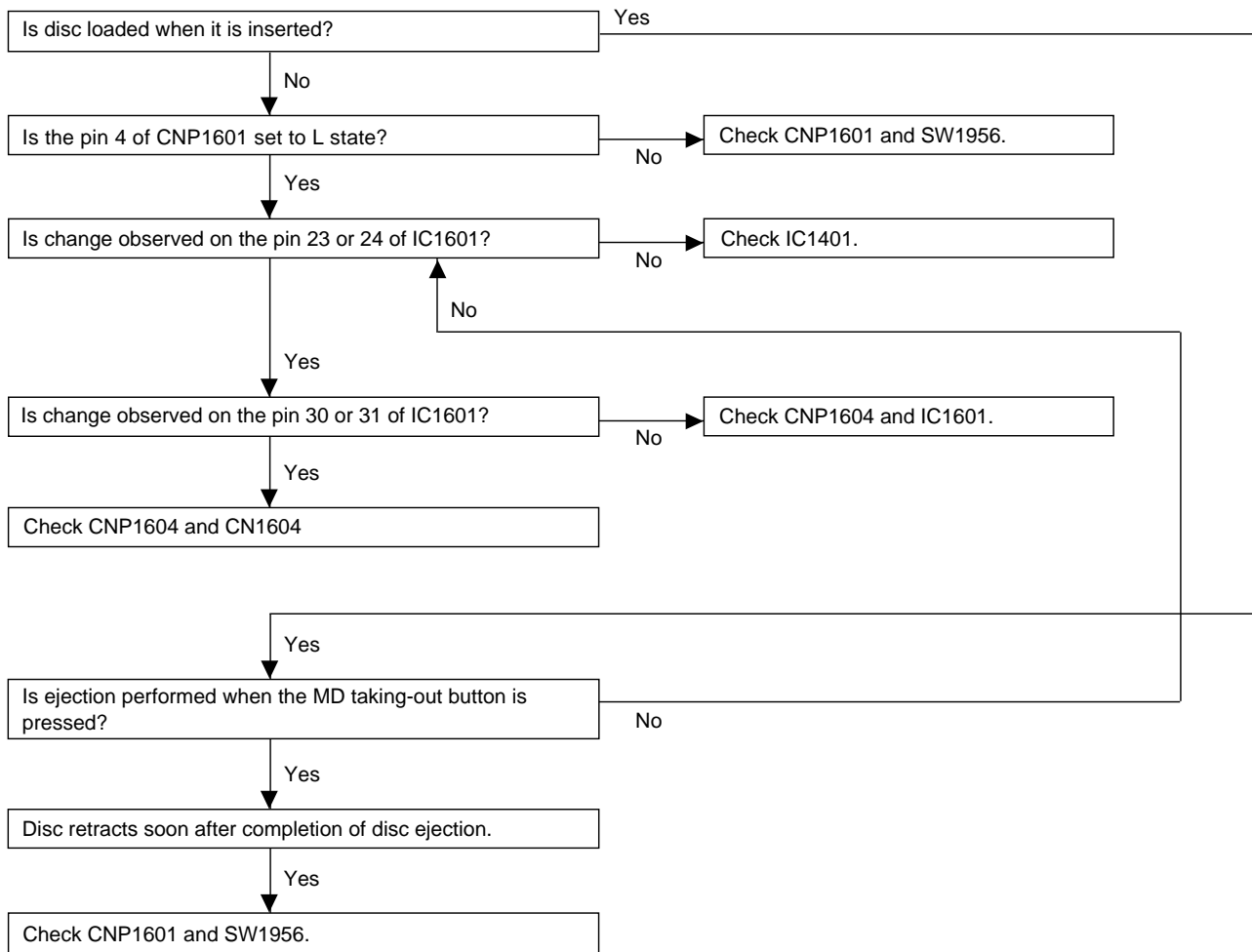


• MD power cannot be turned on.

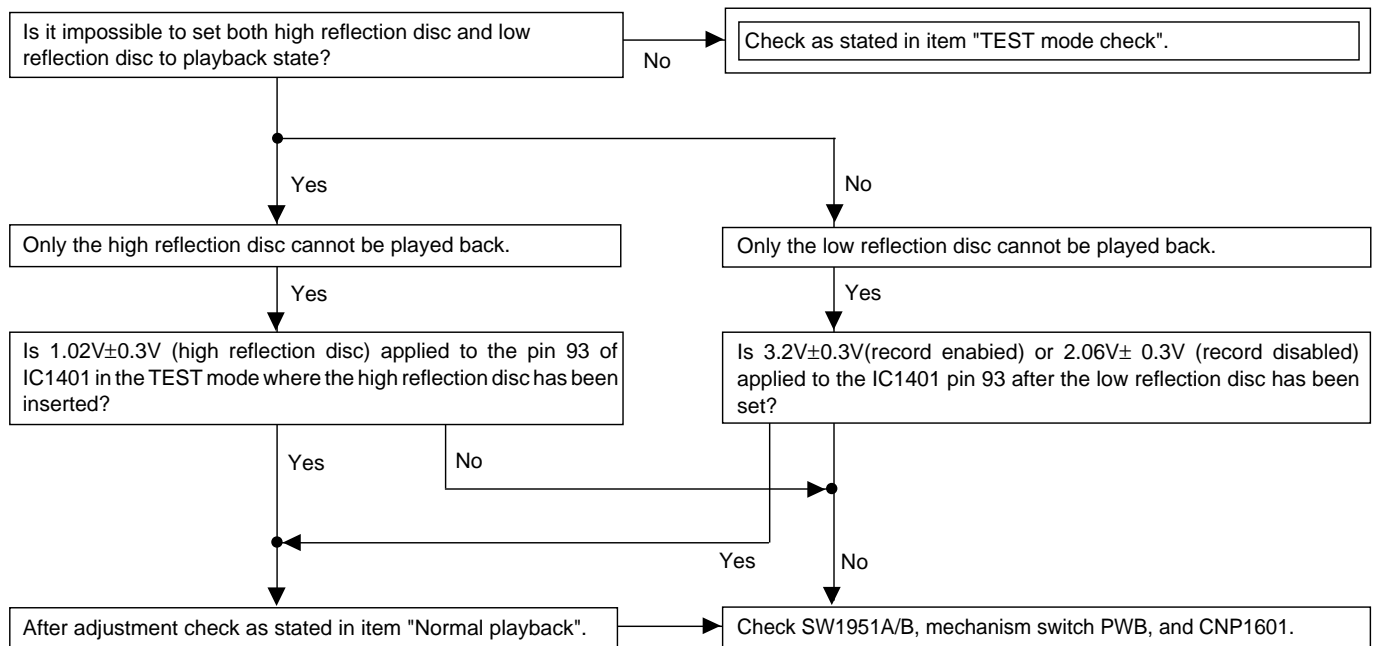


MD-X5H/CP-X5H

• Disc loading is not normal.

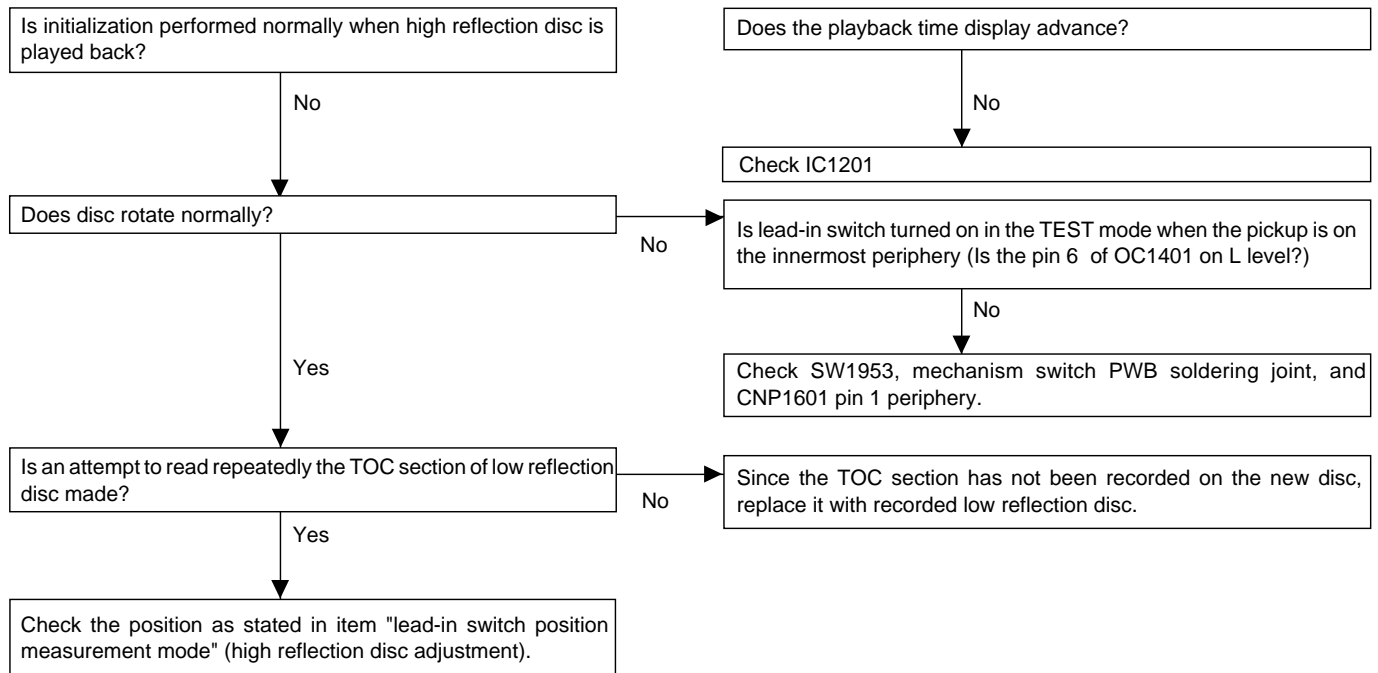


• Playback state cannot be set.



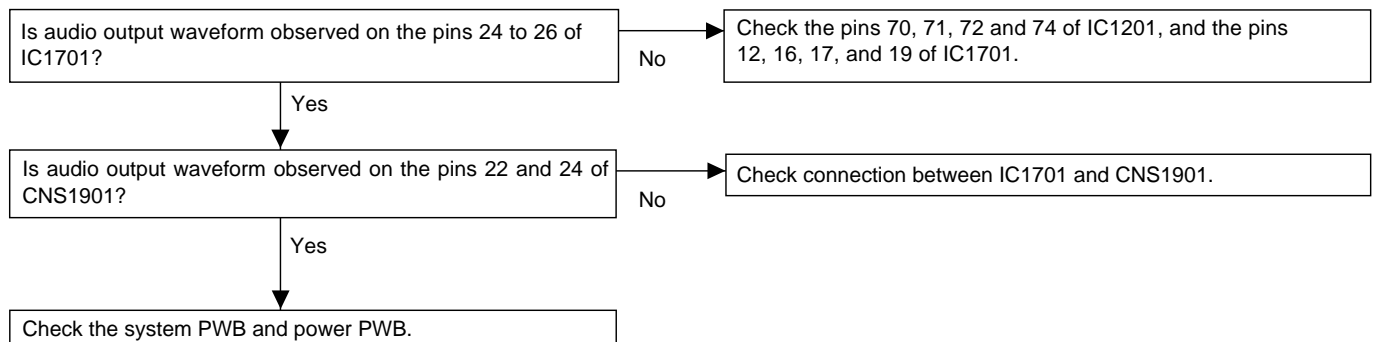
• Normal playback

When it has been confirmed that EEPROM value is normal in the TEST mode



• Audio playback circuit

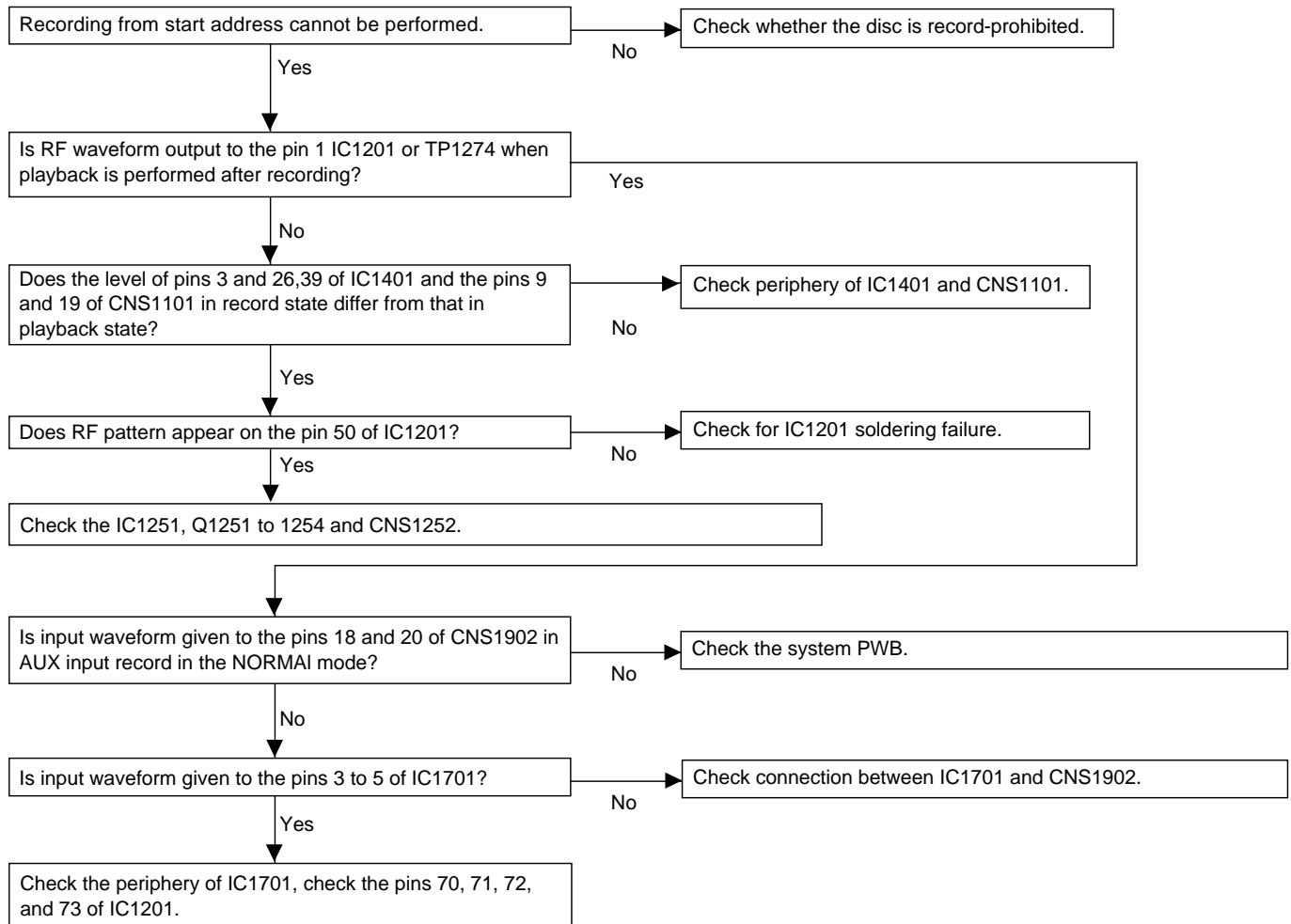
When sound is not output although the playback time display advances during playback in the normal mode.



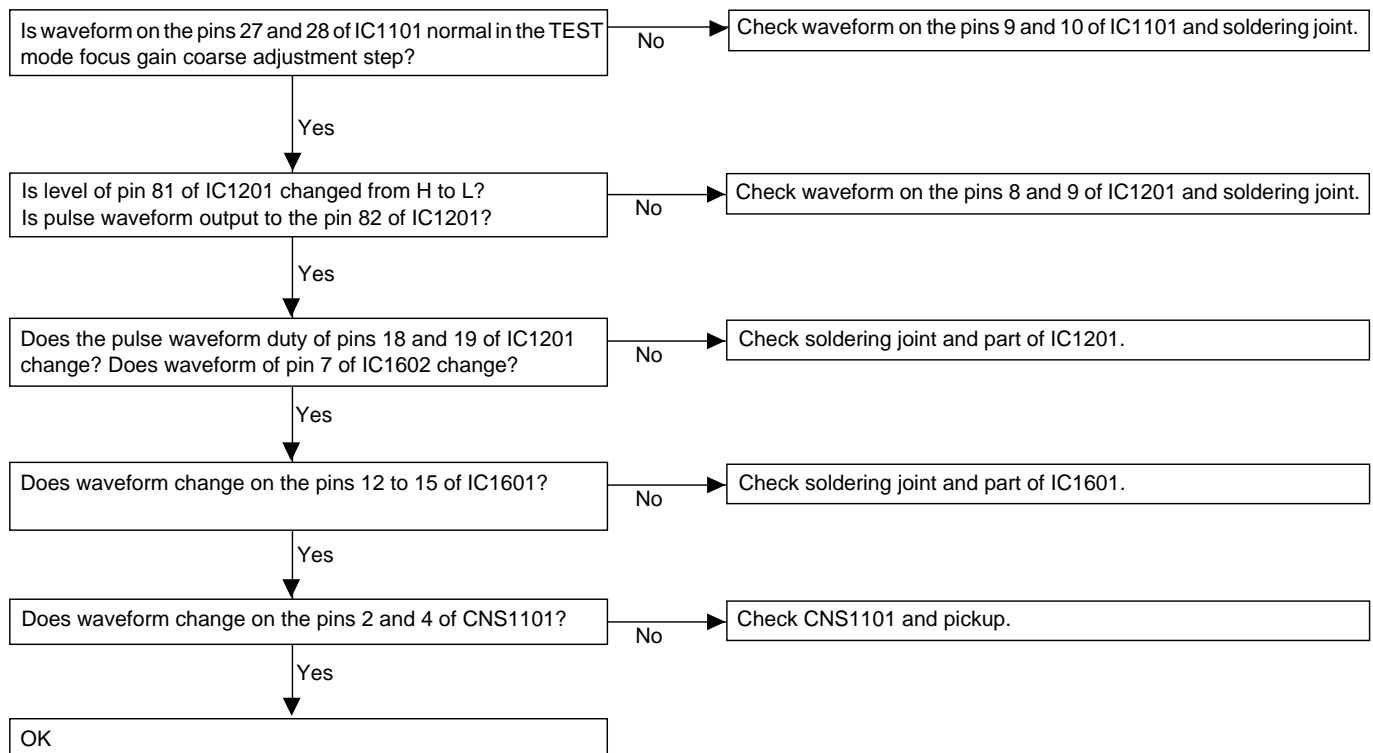
MD-X5H/CP-X5H

• Record and playback operation

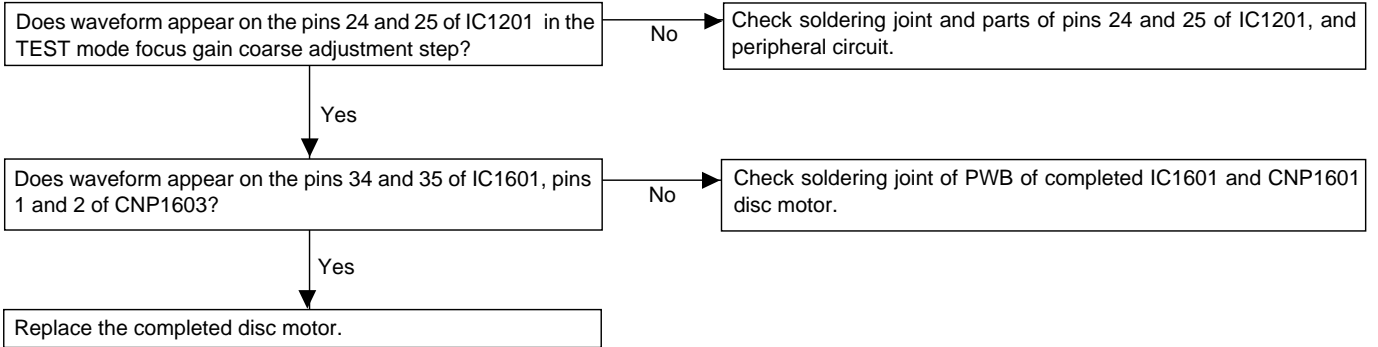
Insert the low reflection disc, and after verifying the audio output in the normal mode playback set the record/playback TEST mode



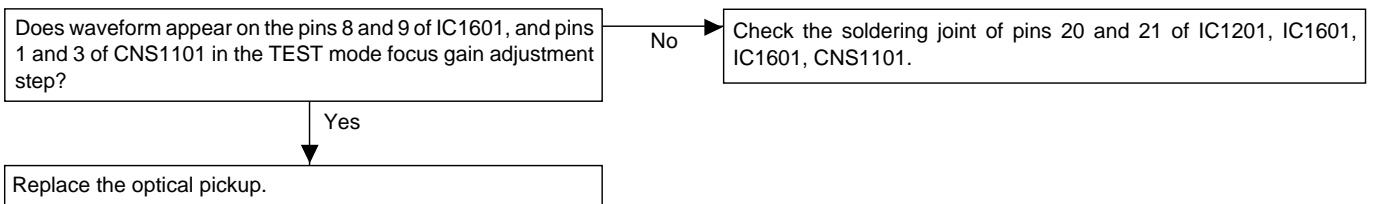
• Focus servo failure



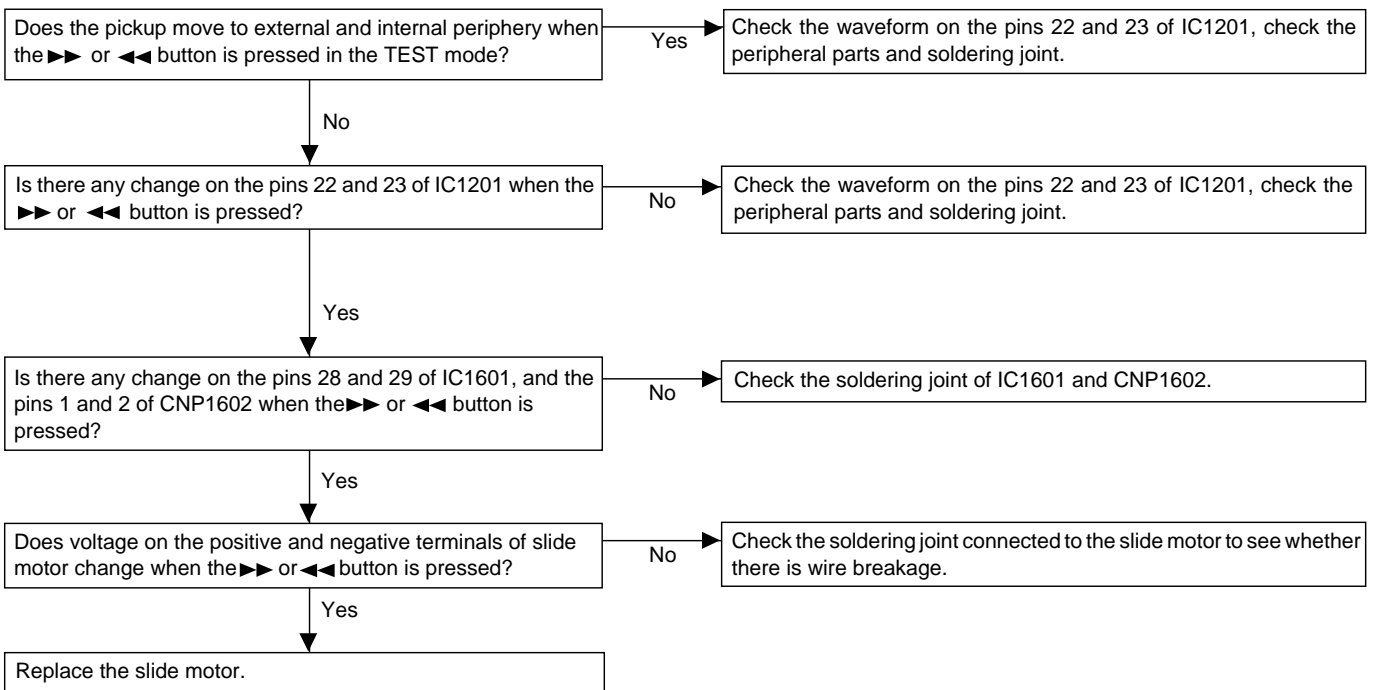
• Disc motor fails to run



• Tracking servo failure



• Slide servo failure



FUNCTION TABLE OF IC

IC901 RH-iX2718AFZZ: System Control Microcomputer(iX2718AF) (1/2)

Pin No.	Terminal Name	Port Name	Input/Output	Function
1*-4*	C-SW1-C-SW4	P120/RTP0-P123/RTP3	In/Output	Real time output port to output data synchronizing with trigger
5*-8*	TRY_SW1-TRY_SW4	P124/RTP4-P127/RTP7	In/Output	Real time output port to output data synchronizing with trigger
9	VDD	VDD	—	Power terminal
10	MAIN CLK OUT	X2	—	Connection of crystal for main system clock oscillation
11	MAIN CLK IN	X1	Input	Connection of crystal for main system clock oscillation
12	Vss	Vss	—	GND
13*	SUB CLK OUT	XT2	—	Connection of subsystem clock oscillation
14	SUB CLK IN	XT1	Input	Connection of subsystem clock oscillation
15	RESET	RESET	Input	System reset input
16	RX IN	P00/INTP0	In/Output	External interruption request input
17	P-IN	P01/INTP1	In/Output	External interruption request input
18	NAME IN	P02/INTP2/NMI	In/Output	External interruption request input
19*	KB DATA IN/OUT	P03/INTP3	In/Output	External interruption request input
20*	KB CLK IN/OUT	P04/INTP4	In/Output	External interruption request input
21*	PROTECT	P05/INTP5	In/Output	External interruption request input
22	DSTB	P06/INTP6	In/Output	External interruption request input
23	AVDD	AVDD	—	Positive power for A/D converter. Connection to VDD
24	ANREF0	AVREF0	—	Application of reference voltage for A/D converter
25-29	KEY0-KEY4	P10/ANI0-P14/ANI4	Input	Analog voltage input for A/D converter
30	INTIAL AREA	P15/ANI5	Input	Analog voltage input for A/D converter
31*	SPAN SELECT	P16/ANI6	Input	Analog voltage input for A/D converter
32*	VSM	P17/ANI7	Input	Analog voltage input for A/D converter
33	AVSS	AVSS	—	GND for A/D converter, D/A converter. Connection to VSS
34	SD	P130/ANO0	In/Output	GND for A/D converter, D/A converter. Connection to VSS
35*		P131/ANO1	In/Output	GND for A/D converter, D/A converter. Connection to VSS
36	AVREF1	AVREF1	—	Application of reference voltage for A/D converter
37	PC_IN	P70/RxD2/SI2	In/Output	Serial data input (UART2)
38	PC_OUT	P71/TxD2/SO2	In/Output	Serial data output (UART2)
39	VLOAD	P72/ASCK2/SCK2	In/Output	Baud rate clock input (UAET2)
40	MD-DATA	P20/RxD1/SI1	In/Output	Serial data input (UART1)
41	K-DATA	P21/TxD1/SO1	In/Output	Serial data output (UART1)
42	DSCK	P22/ASCK1/SCK1	In/Output	Baud rate clock input (UAET1)
43	MIC_SW	P23/PCL	In/Output	Clock output (For trimming of main system clock and subsystem clock)
44	RWC	P24/BUZ	In/Output	Buzzer output
45	SQOUT	P25/SI0/SDA0	In/Output	Serial data input (3-line type serial I/O0)
46	COIN	P26/SO0	In/Output	Serial data input (3-line type serial I/O0)
47	CQCK	P27/SCK0/SCL0	In/Output	Serial clock input/output (3-line type serial I/O0)
48	RES	P80/A0	In/Output	Low-order address bus in case of external memory expansion
49	WRQ	P81/A1	In/Output	Low-order address bus in case of external memory expansion
50	DRF	P82/A2	In/Output	Low-order address bus in case of external memory expansion
51	SL+	P83/A3	In/Output	Low-order address bus in case of external memory expansion
52	SL-	P84/A4	In/Output	Low-order address bus in case of external memory expansion
53	PU IN	P85/A5	In/Output	Low-order address bus in case of external memory expansion
54	CD-MUTE	P86/A6	In/Output	Low-order address bus in case of external memory expansion
55	MIC_MUTE	P87/A7	In/Output	Low-order address bus in case of external memory expansion
56	S-MUTE	P40/AD0	In/Output	Low-order address/data bus in case of external memory expansion
57	L-MUTE	P41/AD1	In/Output	Low-order address/data bus in case of external memory expansion
58	RLY	P42/AD2	In/Output	Low-order address/data bus in case of external memory expansion
59	POWER	P43/AD3	In/Output	Low-order address/data bus in case of external memory expansion
60	DIN_IN_B	P44/AD4	In/Output	Low-order address/data bus in case of external memory expansion
61	DIN_IN_A	P45/AD5	In/Output	Low-order address/data bus in case of external memory expansion

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC901 RH-iX2718AFZZ: System Control Microcomputer(iX2718AF) (2/2)

Pin No.	Terminal Name	Port Name	Input/Output	Function
62*	JOG_B	P46/AD6	In/Output	Low-order address/data bus in case of external memory expansion
63*	JOG_A	P47/AD7	In/Output	Low-order address/data bus in case of external memory expansion
64	CCB-CE	P50/A8	In/Output	Medium-order address bus in case of external memory expansion
65	CCB-DO	P51/A9	In/Output	Medium-order address bus in case of external memory expansion
66	CCB-DI	P52/A10	In/Output	Medium-order address bus in case of external memory expansion
67	CCB-CL	P53/A11	In/Output	Medium-order address bus in case of external memory expansion
68*	FAN MOTOR	P54/A12	In/Output	Medium-order address bus in case of external memory expansion
69	P-DOWN	P55/A13	In/Output	Medium-order address bus in case of external memory expansion
70*	F-SELECT	P56/A14	In/Output	Medium-order address bus in case of external memory expansion
71	TUNER MUTE	P57/A15	In/Output	Medium-order address bus in case of external memory expansion
72	VSS	VSS	—	GND
73	RESET	P60/A16	In/Output	High-order address bus in case of external memory expansion
74	S-ID	P61/A17	In/Output	High-order address bus in case of external memory expansion
75	LOAD	P62/A18	In/Output	High-order address bus in case of external memory expansion
76	SYN	P63/A19	In/Output	High-order address bus in case of external memory expansion
77	DATA	P64/RD	In/Output	Strobe signal output for external memory read operation
78	CLK	P65/WR	In/Output	Strobe signal output for external memory read operation
79*		P66/WAIT	In/Output	Weight insertion in case of external memory access
80*	MD-IN	P67/ASTB	In/Output	Strobe output to latch externally the address information to be output to port 4 to port 6, port 8 for external memory access
81	VDD	VDD	In/Output	Power terminal
82	CS	P100/TI5/TO5	In/Output	External count clock input into 8-bit timer register 5
83	RS	P101/TI6/TO7	In/Output	External count clock input into 8-bit timer register 6
84*		P102/TI7/TO8	In/Output	External count clock input into 8-bit timer register 7
85	MODEL SELECT	P103/TI8/TO9	In/Output	External count clock input into 8-bit timer register 8
86	CD_OPEN_SW	P30/TO0	In/Output	16-bit timer output (to be used also for 14-bit PWM output)
87	CD_CLOSE_SW	P31/TO1	In/Output	8-bit timer output (to be used also for 8-bit PWM output)
88	AUX_B	P32/TO2	In/Output	8-bit timer output (to be used also for 8-bit PWM output)
89	AUX_A	P33/TI1	In/Output	External count clock input into 8-bit timer register 1
90	SRS_PASS/ON	P34/TI4	In/Output	External count clock input into 8-bit timer register 2
91	NAME SEL	P35/TI00	In/Output	External count clock input into 16-bit timer register
92	DATA SEL	P36/TI01	In/Output	Capture trigger signal input into capture/compare register 00
93	NEXT	P37	In/Output	A/D SW Selector signal
94	TEST/VPP	TECT/VPP	—	Flash memory programming mode setting High voltage application terminal to be used for program writing/verifying
95	PLAY1 TRACK	P90	In/Output	A/D SW Selector signal
96	PLAY NORMAL	P91	In/Output	A/D SW Selector signal
97	SKIP+10	P92	In/Output	A/D SW Selector signal
98	SKIP+1	P93	In/Output	A/D SW Selector signal
99	STOP	P94	In/Output	A/D SW Selector signal
100	DUBB MODE	P95	In/Output	A/D SW Selector signal

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

MD-X5H/CP-X5H

IC712 RH-iX0069AWZZ:FL Driver (IX0069AW)

Pin No.	Terminal Name	Function
1-12	DIG11-DIG00	Digit output
13	RESET	Reset input
14	CS	Chip selection input
15	SCK	Shift clock input
16	SDATA	Serial data input
17*,18*	P1,P0	Output port (static operation)
19	Vcc1	Positive power terminal for internal logic
20	Xout	Clock output
21	Xin	Clock input
22	Vss	GND terminal
23-31	SEG35-SEG27	Segment output
32	Vp	Negative power terminal for VFD drive
33-59	SEG26-SEG00	Segment output
60	Vcc2	Positive power terminal for digit output and segment output
61-64	DIG15-DIG12	Digit output

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC901 RH-iX2718AFZZ: System Control Microcomputer (iX2718AF)

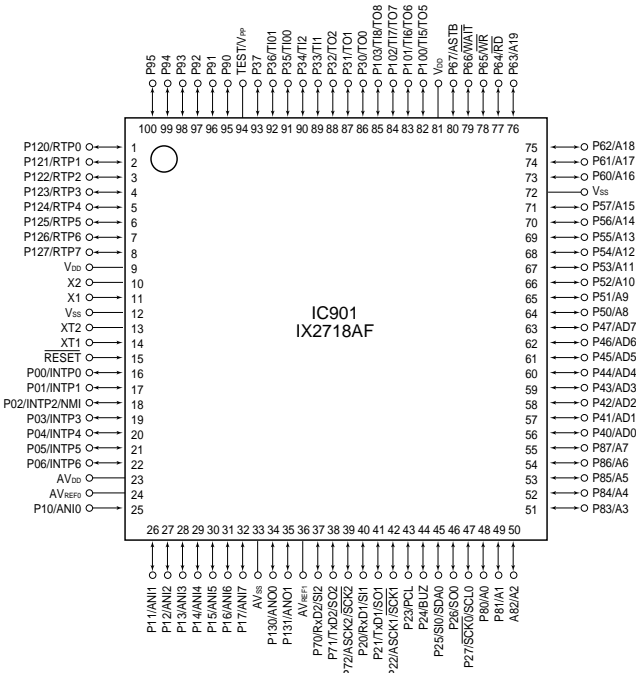


Figure 80-1 BLOCK DIAGRAM OF IC

IC712 RH-iX0069AWZZ: FL Driver (IX0069AW)

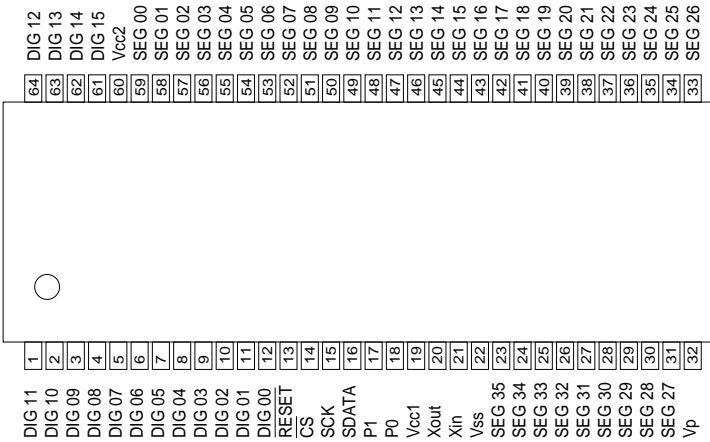


Figure 80-2 BLOCK DIAGRAM OF IC

IC1101 VHiiR3R55//-1:RF Signal Control (IR3R55)

Pin No.	Terminal Name	Function
1	RF1	RF signal input terminal 1 Input of RF signal output of pickup
2	RF2	RF signal input terminal 2 Input of RF signal output of pickup
3	RF3	RF signal input terminal 3 Input of RF signal output of pickup
4	RF4	RF signal input terminal 4 Input of RF signal output of pickup
5	REFI	Reference voltage amp. input terminal
6	REFO	Reference voltage amp. output terminal
7	RFADD	RF1 to 4 resistance addition output terminal
8	TCGI	Track cross detection signal amp. input terminal for groove
9	AIN	Servo signal amp. (focus servo system) inversion input terminal
10	BIN	Servo signal amp. (focus servo system) inversion input terminal
11	EIN	Servo signal amp. (tracking servo system) inversion input terminal
12	FIN	Servo signal amp. (tracking servo system) inversion input terminal
13	BIAS	Bias input terminal
14	AVCC	Analog section power terminal
15*	VSTBY	Logic signal output terminal (STBY signal inversion signal is output.)
16*	XDISC	Logic signal output terminal (DISC signal inversion signal is output.)
17*	XSGAIN	Logic signal output terminal (SGAIN signal inversion signal is output.)
18	AGND	Analog section GND terminal
19	DGND	Digital section GND terminal
20	TEMP	Chip temperature detection terminal
21	LATCH	Latch signal input terminal
22	CLOCK	Clock signal input terminal
23	DATA	Serial data input terminal
24	DVCC	Digital section power terminal
25	FOUT	Servo signal amp. (tracking servo system) output terminal
26	EOUT	Servo signal amp. (tracking servo system) output terminal
27	BOUT	Servo signal amp. (focus servo system) output terminal
28	AOUT	Servo signal amp. (focus servo system) output terminal
29	TCGO	Track cross detection signal amp. output terminal for groove
30	WBO	Comparator output terminal for ADIP signal binary-coding
31	22KI	Comparator input terminal for ADIP signal binary-coding
32	22KO	ADIP signal HPF amp. output terminal
33	ADLPFO	ADIP signal LPF amp. output terminal
34*	NC	NC
35	ADIPO	ADIP signal preamp. output terminal
36	ADIPI	ADIP signal AGC amp. output terminal
37	ADAGC	ADIP signal AGC smoothing capacitor connection terminal
38	ADAGI	ADIP signal AGC amp. input terminal
39	RF2-1	RF1 and RF2 difference signal
40	EFMO	RF signal preamp. output terminal
41*	WFMI	RF signal AGC amp. output terminal
42	AVCC	Analog section power terminal
43	AGND	Analog section GND terminal
44	EFMAGC	EFM signal AGC smoothing capacitor connection terminal
45	EFMAGI	EFM signal AGC amp. output terminal
46*	ATTR	Pins 47 and 48 output signal attenuation terminal
47	GOUT	Output of signal of RF1+RF2-RF3-RF4 for groove
48	POUT	Rf1 to 4 resistance addition output for pit

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

MD-X5H/CP-X5H

IC1201 VHiLR37648/-1:ENDEC/ATRAC (LR37648) (1/2)

Pin No.	Terminal Name	Input/Output	Function
1*	EFMMON	Output	EFM monitor output
2	AVCC	—	Analog power
3	EFMI	Input	EFM signal input from RF amp.
4	AGND	—	Analog GND
5	AIN	Input	Focus error signal A
6	EIN	Input	Tracking error signal E
7	TCG	Input	Track cross signal
8	BIN	Input	Focus error signal B
9	FIN	Input	Tracking error signal F
10*	VBAT	Input	Power voltage detection signal for constant voltage servo
11	WBI	Input	ADIP wobble signal
12	VDD1	—	Digital power
13	DGND	—	Digital GND
14,15	TEST0,TEST1	Input	Input for test. Connection to GND in case of normal use
16	TEST2	Input	Input for test. Endocode/servo mode and ATRAC mode selection
17	X176KO	Output	Clock output. $f=176.4$ kHz (4fs)
18	FODRF	Output	Focus servo forward output. PWM
19	FODRR	Output	Focus servo reverse output. PWM
20	TRDRF	Output	Tracking servo forward output. PWM
21	LATCH	Output	Tracking servo reverse output. PWM
22	CLOCK	Output	Slide servo forward output. PWM
23	DATA	Output	Slide servo reverse output. PWM
24	DVCC	Output	Spindle servo forward output or spindle servo output. PWM
25	FOUT	Output	Spindle servo reverse output or spindle rotation (forward/reverse)selection
26	EOUT	Output	Address output to external D-RAM. ADR3
27	BOUT	Output	Address output to external D-RAM. ADR2
28	AOUT	Output	Address output to external D-RAM. ADR1
29	TCGO	Output	Address output to external D-RAM. ADR0 (LSB)
30*	WBO	Output	Address output to external D-RAM. ADR10 (MSB)
31	22KI	—	Power supply for DRAM interface
32	22KO	Output	Address output to external D-RAM. ADR4
33	ADLPFO	Output	Address output to external D-RAM. ADR5
34	NC	Output	Address output to external D-RAM. ADR6
35	ADIPO	Output	Address output to external D-RAM. ADR7
36	ADIPI	Output	Address output to external D-RAM. ADR8
37	ADAGC	Output	Data output enable signal output to external D-RAM
38	ADAGI	—	Digital GND
39	RF2-1	Output	Column address strobe signal output to external D-RAM
40	EFMO	In/Output	Data input/output from and to external D-RAM. D2
41	WFMI	In/Output	Data input/output from and to external D-RAM. D3 (MSB)
42	AVCC	Output	Data input/output from and to external D-RAM. ADR9
43	AGND	Output	Low address strobe signal output to external D-RAM
44	EFMAGC	Output	Data write enable signal output to external D-RAM
45	EFMAGI	In/Output	Data input/output from and to external D-RAM. D1
46	ATTR	In/Output	Data input/output from and to external D-RAM. D0 (LSB)
47*	GOUT	Output	Track cross signal
48*	POUT	Output	ADIP CRC error flag monitor output
49*	PLCK	Output	EFM PLL clock output in playback mode
50	EFM0	Output	EFM signal output in record mode. C1F (C1 error flag) monitor output in playback mode
51*	X700KO	Output	Clock output. $f = 705.6$ kHz. Clock output is not performed when RSTX = 0.
52*	EXPORT0	Output	Microcomputer extension output port 0
53*	EXPORT1	Output	Microcomputer extension output port 1

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC1201 VHiLR37648/-1:ENDEC/ATRAC (LR37648) (2/2)

Pin No.	Terminal Name	Input/Output	Function
54	TESO1	Output	PLLLR. Microcomputer extension output port 2 in case of selection
55	TESO3	In/Output	PLLOSC. Microcomputer extension output port 3 in case of selection
56	TEST4	In/Output	EXTCLK. Microcomputer extension output port 4 in case of selection
57	CDDATA	In/Output	High speed dubbing CD data input. Microcomputer extension output port 5 in case of selection
58	CDLRCK	In/Output	High speed dubbing CD LR data input. Microcomputer extension output port 6 in case of selection
59	CDBCLK	In/Output	High speed dubbing CD bit data input. Microcomputer extension output port 7 in case of selection
60	VXI	Input	Vari-pitch PLL clock input
61	VPO	Output	Vari-pitch PLL phase error output
62	VDD1	—	Digital power
63	DGND	—	Digital GND
64	XI	Input	Oscillation circuit input. 33.8688 MHz
65	XO	Output	Oscillation circuit input. 33.8688 MHz
66	DIN	Input	Digital input signal
67	DOUT	Output	Digital output signal
68	VDD3	—	Power for internal PLL
69	DGND	—	Digital GND
70	LRCK	Output	Music data Lch/Rch selection output
71	BLCK	Output	Music data shift clock
72	DFCK	Output	AD/DA converter digital filter clock. 256 Fs
73	ADDATA	Input	Audio data input
74	DADATA	Output	Audio data output
75*	FEMON	Output	Focus error signal monitor output
76*	TOTMON	Output	Total signal monitor output
77*	TEMON	Output	Tracking error signal monitor output
78*	SBCK	Input	DIN subcode read clock. EIAJ CP-309 Format
79*	SBO	Output	DIN subcode serial data. EIAJ CP-309 Format
80*	SBSY	Output	DIN subcode block sync signal. EIAJ CP-309 Format
81	SFSY	Output	DIN subcode frame sync signal. EIAJ CP-309 Format
82	FOK	Output	Focus OK detection signal. "0" : Focus OK
83	SENSE	Output	Servo status detection signal. "1" : Auto-move, auto-jump, auto-focus retraction
84	COUT	Output	Track cross signal output
85	MCCK	Output	Microcomputer clock output. Clock output is performed also when RSTX = 0.
86	DINTX	Output	System controller interface interruption request output terminal
87	VDD1	—	Digital power
88	DGND	—	Digital GND
89	RSTX	Input	Chip reset input. "L": Reset
90	SYD0	In/Output	System controller interface data bus terminal (LSB)
91~96	SYD1~SYD6	In/Output	System controller interface data bus terminal
97	SYD7	In/Output	System controller interface data bus terminal (MSB)
98	SYWRX	Input	System controller interface register writing pulse input
99	SYRDX	Input	System controller register read pulse input
100	SYRS	Input	System controller interface register selection input

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

MD-X5H/CP-X5H

IC1401 RX-IX0227AWZZ:MD System Microcomputer (IX0227AW) (1/2)

Pin No.	Terminal Name	Input/Output	Function
1*	P96/ANEX1	Output	Input/Output it port P96
2*	P95/ANEX0	Output	Input/Output it port P96
3	P94/DA1	Output	LDVAR (laser power adjustment output)
4*	P93/DA0	Output	ADJS (for automatic adjustment step check)
5*	P92/TB2IN	Output	Input/Output it port P92
6	P91/TB1IN	Input	LD SW CK input (interruption input only in single state)
7	P90/TB0IN	Input	ERR input (monitor PLL UNLOCK)
8	BYTE	Input	GND
9	CNVss	Input	GND
10*	P87/XCIN	Output	ST-ID Output
11*	P86/XOUT	Output	MD search output
12	RESET	Input	RESETInput
13*	XOUT	—	Clock output
14	Vss	—	GND
15	XIN	Input	EXTAL (8.4672 MHz)
16	Vcc	—	+ 3.15V
17	P85/NMI	Input	Input/Output it port P85
18	P84/INT2	Input	DINT (interruption input from MD LSI)
19	P83/INT1	Input	DSense (servo sense input from MD LSI)
20	P82/INT0	Input	ST-ID Input (MD-ON)
21	P81/TA4IN	Input	CD search input (syncro REC suspension input from MD LSI)
22	P80/TA4OUT	Output	MD RSW Output
23*	P77/TA3IN	Input	FSW1 (SW power frequency selection)
24	P76/TA3OUT	Output	Vari-pitch correspondence given (H)/not given (L)
25	P75/TA2IN	Input	P-DOWN (power failure detection)
26	P74/TA2OUT	Output	HDON (magnetic head current ON/OFF output)
27	P73/TA1IN	Output	LD+ (loading motor + control output)
28	P72/TA1OUT	Output	LD- (loading motor + control output)
29	P71/TA0IN	Input	CIN (track count signal input)
30*	P70/TA0OUT	Input	INN SW (inner SW detection input)
31	P67/TXD1	Output	R-DATA
32	P66/RXD1	Output	R-LATCH
33	P65/CLK1	Output	R-CLK
34	P64/CTS1/RTS1/ CTS0/CLKS1	Output	DSTB (system controller communication enable and communication beingexecuted)
35	P63/TXD0	Output	MD DATA (MD Data Output)
36	P62/RXD0	Input	K DATA (system controller data input)
37	P61/CLK0	Input	DSCK (system controller communication clock input)
38	P60/CTS0/RTS0	Input	4M/16M DRAM selection input
39	P57/RDY/CLKOUT	Output	R/P output (REC/PLAY selection)
40	P56/ALE	Input	FOK (focus servo status monitor input)
41*	WFMI	In/Output	Input/Output it port P55
42	AVCC	Output	S2 Ouput
43	AGND	Output	S1 Output
44	EFMAGC	Output	SYRS (MD-LSI register selection signal output)
45	EFMAGI	Output	SYRD (MD-LSI read signal output)
46	ATTR	Output	SYWR (MD-LSI right signal output)
47	GOUT	In/Output	SYS D7 (data bus 7)
48	POUT	In/Output	SYS D6 (data bus 6)
49	PLCK	In/Output	SYS D5 (data bus 5)
50	EFM0	In/Output	SYS D4 (data bus 4)
51	X700KO	In/Output	SYS D3 (data bus 3)

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC1401 RX-iX0227AWZZ:MD System Microcomputer (IX0227AW) (2/2)

Pin No.	Terminal Name	Input/Output	Function
52	P42/A18	In/Output	SYS D2 (data bus 2)
53	P41/A17	In/Output	SYS D1 (data bus 1)
54	P40/A16	In/Output	SYS D0 (data bus 0)
55*	P37/A15	Output	Input/Output it port P37
56*	P36/A14	Output	Input/Output it port P36
57*	P35/A13	Output	Input/Output it port P35
58	P34/A12	Output	EEPRO (EEPROM protection cancel)
59	P33/A11	Output	EPCS (EEPROM chip selector output)
60	P32/A10	In/Output	EEPD (EEPROM serial data output)
61	P31/A9	Output	EEPK (EEPROM serial colck output)
62	Vcc	Input	+ 3.15V
63*	P30/A8	Output	Input/Output it port P30
64	Vss	—	GND
65	P27/A7	Output	L3 DATA (soft serial communication, 2 modes provided, LSB fast)
66	P26/A6	Output	L3 MODE (soft serial communication, 2 modes provided, LSB fast)
67	P25/A5	Output	L3 CLK (soft serial communication, 2 modes provided, LSB fast)
68*	P24/A4	Output	Input/Output it port P24
69*	P23/A3	Output	Input/Output it port P23
70	P22/A2	Output	PCNT0 output
71*	P21/A1	Output	Input/Output it port
72	P20/A0	Output	LDON output (H: ON)
73	P17/D15	Output	ANLPTR output
74*	P16/D14	Output	ADPON output (for CK)
75*	P15/D13	Output	DAPON output (for CK)
76*	P14/D12	Output	DFS0 output
77*	P13/D11	Output	DFS1 output
78*	P12/D10	Output	DIG EX output (for CK)
79*	P11/D9	Output	DIG CD output (for CK)
80	P10/D8	Output	XRST (system reset output)
81*	P07/D7	Output	AD MUTE output (for CK)
82*	P06/D6	Output	EMPHA output (for CK)
83*	P05/D5	Output	DA MUTE output (for CK)
84*	P04/D4	Output	MUTE output
85*	P03/D3	Output	DOUTM output (for CK)
86	P02/D2	Input	TEST2 (special mode selection 2)
87	P01/D1	Input	TEST1 (special mode selection 1)
88	P00/D0	Input	TEST0 (special mode selection 0)
89	P107/AN7/KI3	Input	AVCK3 (special mode monitor input)
90	P106/AN6/KI2	Input	AVCK2 (AD/DA section 3.1V monitor input)
91	P105/AN5/KI1	Input	AVCK1 (DOUT section 5V monitor input)
92	P104/AN4/KI0	Input	DTEMP (temperature detection input)
93	P103/AN3	Input	MINF (disc type/REC input)
94	P102/AN2	Input	TEST K1 (test key input 1)
95	P101/AN1	Input	TEST K2 (test key input 2)
96	AVss	—	GND
97	P100/AN0	Input	HINF (mechanism position/HEAD position)
98	VREF	—	+ 3.15V
99	AVcc	—	+ 3.15V
100	P97/ADTRG	Input	Input/Output it port

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

MD-X5H/CP-X5H

IC1101 VHiiR3R55/-1: RF Signal Control (IR3R55)

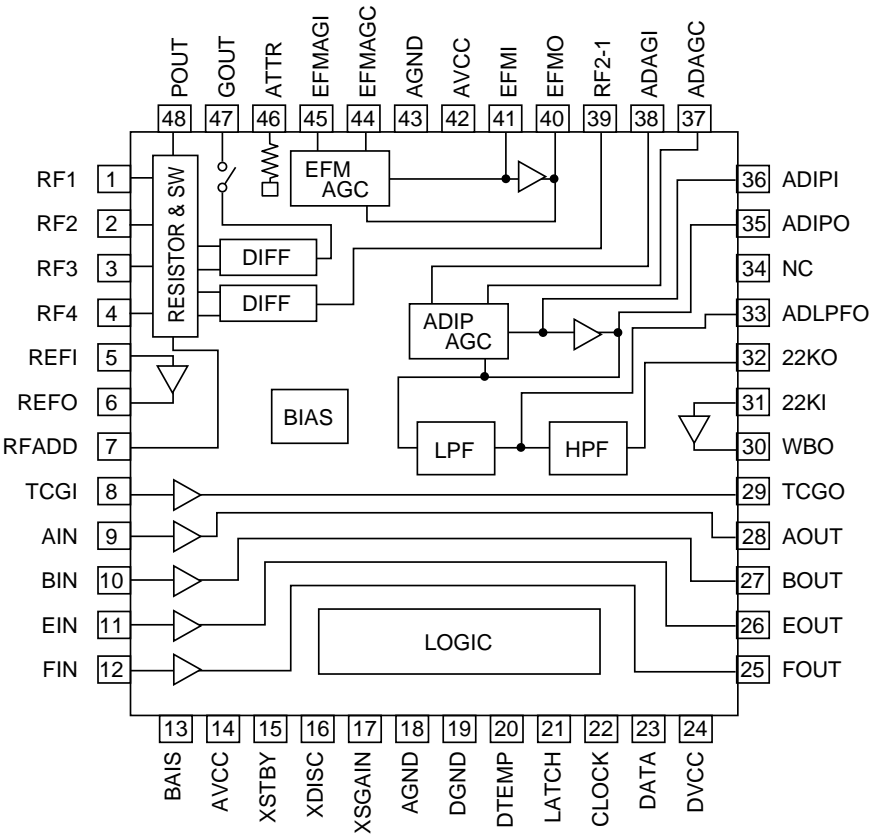


Figure 86-1 BLOCK DIAGRAM OF IC

IC1201 VHiiLR37648/-1: ENDEC/ATRAC (LR37648)

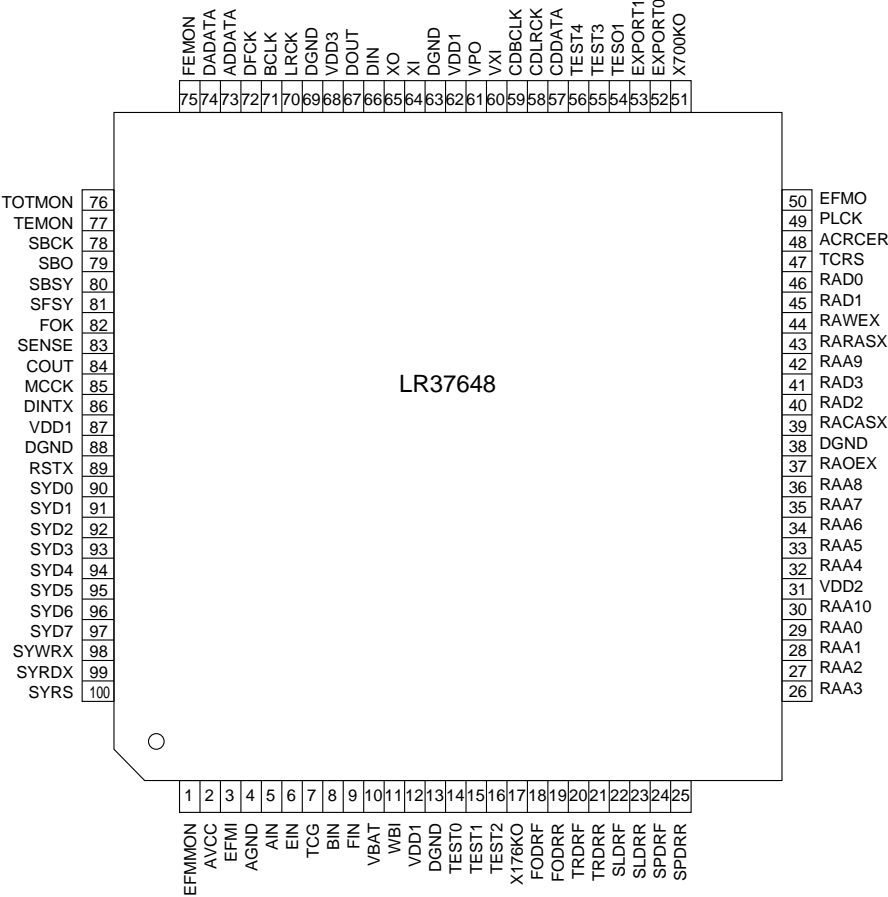


Figure 86-2 BLOCK DIAGRAM OF IC

SHARP PARTS GUIDE

MODEL **MD-X5H**
CP-X5H

“HOW TO ORDER REPLACEMENT PARTS”

To have your order filled promptly and correctly, please furnish the following information.

- | | |
|-----------------|----------------|
| 1. MODEL NUMBER | 2. REF. No. |
| 3. PART NO. | 4. DESCRIPTION |

★ MARK: SPARE PARTS-DELIVERY SECTION

For U.S.A. only

Contact your nearest SHARP Parts Distributor to order.

For location of SHARP Parts Distributor,
Please call Toll-Free;
1-800-BE-SHARP

Explanation of capacitors/resistors parts codes

Capacitors

VCC Ceramic type
 VCK Ceramic type
 VCT Semiconductor type
 VC •• MF Cylindrical type (without lead wire)
 VC •• MN Cylindrical type (without lead wire)
 VC •• TV Square type (without lead wire)
 VC •• TQ Square type (without lead wire)
 VC •• CY Square type (without lead wire)
 VC •• CZ Square type (without lead wire)
 VC J .. The 13th character represents capacity difference.
 ("J" ±5%, "K" ±10%, "M" ±20%, "N" ±30%,
 "C" ±0.25 pF, "D" ±0.5 pF, "Z" +80-20%.)


If there are no indications for the electrolytic capacitors, error is ±20%.

Resistors

VRD Carbon-film type
 VRS Carbon-film type
 VRN Metal-film type
 VR •• MF Cylindrical type (without lead wire)
 VR •• MN Cylindrical type (without lead wire)
 VR •• TV Square type (without lead wire)
 VR •• TQ Square type (without lead wire)
 VR •• CY Square type (without lead wire)
 VR •• CZ Square type (without lead wire)
 VR J .. The 13th character represents error.
 ("J" ±5%, "F" ±1%, "D" ±0.5%.)

If there are no indications for other parts, the resistors are ±5% carbon-film type.

NOTE:

Parts marked with “” are important for maintaining the safety of the set.

Be sure to replace parts with specified ones for maintaining the safety and performance of the set.

MD-X5H/CP-X5H

NO.	PART CODE	★	PRICE RANK	DESCRIPTION
MD-X5H				
INTEGRATED CIRCUITS				
IC1	VHILA9241M/-1	J	AS	Servo Amp.,LA9241M
IC2	VHILC78623D-1	J	AY	Servo/Signal Control,LC78623D
IC5	VHIM56748FP-1	J	AR	Focus/Tracking/Spin/Slide Driver,M56748FP
IC91	VHITA7291S/-1	J	AH	Loading Motor Driver,TA7291S
IC302	VHILC72131/-1	J	AP	PLL (Tuner),LC72131
IC303	VHILA1832/-1	J	AR	FM IF Det./FM Mpx./AM IF, LA1832
IC501	VHILC75396E-1	J	AT	Audio Processor,LC75396E
IC511	VHIBU4052BC-1	J	AH	Function Selector,BU4052BC
IC552	VHINJM4565M-1	J	AC	Ope Amp.,NJM4565M
IC554	VHINJM4565M-1	J	AC	Ope Amp.,NJM4565M
IC651	VHINJM4558MF-	J	AE	Mic Amp.,NJM4558MF
IC652	VHI74HC04/-1	J	AF	Inverter,74HC04
IC712	RH-IX0069AWZZ	J	BA	FL Driver,IX0069AW
IC801	VHILA4451/-1	J	AN	Power Amp.,LA4451
IC802	VHINJM431L/-1	J	AE	Voltage Regulator,NJM431L
IC901	RH-IX2718AFZZ	J		System Microcomputer, IX2718AF
IC903	VHIPST9140/-1	J	AG	Reset,PST9140
IC904	VHI74HC153F-1	J	AH	Inverter,74HC153F
IC1101	VHIIR3R55/-1	J	AQ	RF Signal,Processor,IR3R55
IC1201	VHILR37648/-1	J	BD	ENDEC,LR37648
IC1202	RH-IX2474AFZZ	J	BF	4Mbit D-RAM,IX2474AF
IC1251	VHI74ACT02F-1	J	AF	Head Driver,74ACT02F
IC1401	RH-IX0227AWZZ	J	BF	MD System Microcomputer, IX0227AW
IC1402	VHIS29294A/-1	J	AH	E ² -PROM,S29294A
IC1601	VHIM56758FP-1	J	AM	5-CH Motor Driver,M56758FP
IC1701	VHIUDA1340/-1	J	BA	AD/DA Converter,UDA1340
IC1801	VHIXC62EP32-1	J	AE	Regulator,XC62EP32
IC1802	VHINJM431U/-1	J	AE	Regulator,NJM431U
IC1906	VHITC7ST08F-1	J	AE	AND Gate,TC7ST08F
IC1907	VHITC9246F/-1	J	AM	Clock Generator,TC9246F
IC1916	VHI74VHC08FT1	J	AF	AND Gate,74VHC08FT
IC1990	VHI74AC04FS/-1	J	AF	Inverter,74AC04FS
ICT21	VHILC72720/-1	J	AW	RDS Decoder,LC72720

TRANSISTORS

Q1	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q71,72	VSDTC363TS/-1	J	AC	Digital,NPN,DTC363 TS
Q73	VSKRA107M/-1	J	AE	Digital,PNP,KRA107 M
Q81	VS2SD468-C/-1	J	AD	Silicon,NPN,2SD468 C
Q91	VSKRC107S/-1	J	AB	Digital,NPN,KRC107 S
Q301	VS2SC380-O/-1	J	AC	Silicon,NPN,2SC380 O
Q353,354	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q360	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q361	VSKRC107M/-1	J	AC	Digital,NPN,KRC107 M
Q371	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q401	VSKRC107M/-1	J	AC	Digital,NPN,KRC107 M
Q403	VSKRC107M/-1	J	AC	Digital,NPN,KRC107 M
Q421	VSKRA107M/-1	J	AE	Digital,PNP,KRA107 M
Q423,424	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q501,502	VSDTC363TS/-1	J	AC	Digital,NPN,DTC363 TS
Q705~708	VSKRC107M/-1	J	AC	Digital,NPN,KRC107 M
Q801	VS2SB1238R/-1	J	AD	Silicon,PNP,2SB1238 R
Q802	VS2SB562-C/-1	J	AD	Silicon,PNP,2SB562 C
Q821,822	VSKRC107M/-1	J	AC	Digital,NPN,KRC107 M
Q850	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q851	VS2SD2012/-1	J	AD	Silicon,NPN,2SD2012
Q853	VS2SD468-C/-1	J	AD	Silicon,NPN,2SD468 C
Q860	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q861	VS2SD2012/-1	J	AD	Silicon,NPN,2SD2012
Q862	VS2SD2012Y/-1	J	AF	Silicon,NPN,2SD2012 Y
Q863	VSKRC107M/-1	J	AC	Digital,NPN,KRC107 M
Q865	VSKRC107M/-1	J	AC	Digital,NPN,KRC107 M
Q870	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q871	VS2SD2012/-1	J	AD	Silicon,NPN,2SD2012
Q880	VS2SD2012/-1	J	AD	Silicon,NPN,2SD2012
Q881	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q891	VS2SB562-C/-1	J	AD	Silicon,PNP,2SB562 C
Q895	VS2SD467-C/-1	J	AC	Silicon,PNP,2SD467 C
Q902,903	VS2SC2412KR-1	J	AB	Silicon,NPN,2SC2412 KR
Q910	VS2SC2412KR-1	J	AB	Silicon,NPN,2SC2412 KR
Q1251,1252	VS2SK2909/-1	J	AE	FET,2SK2909
Q1253,1254	VS2SK1473/-1	J	AF	FET,2SK1473

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
Q1401	VSARN2404///-1	J	AC	Digital,PNP,RN2404
Q1402	VSARNC1404///-1	J	AB	Digital,NPN,RNC1404
Q1403	VSARN2404///-1	J	AC	Digital,PNP,RN2404
Q1404	VSARNC1404///-1	J	AB	Digital,NPN,RNC1404
Q1451	VSARNC1407///-1	J	AC	Digital,NPN,RNC1407
Q1601	VS2SA1314C/-1	J	AD	Silicon,PNP,2SA1314 C
Q1701	VS2SC2412KR-1	J	AB	Silicon,NPN,2SC2412 KR
Q1801	VS2SA1314C/-1	J	AD	Silicon,PNP,2SA1314 C
Q1802,1803	VSARN1406///-1	J	AB	Digital,NPN,RN1406
Q1804	VS2SA1162G/-1	J	AB	Silicon,PNP,2SA1162 G
Q1806	VSARNC1404///-1	J	AB	Digital,NPN,RNC1404
Q1807	VS2SA1314C/-1	J	AD	Silicon,PNP,2SA1314 C
Q1820	VS2SA1162G/-1	J	AB	Silicon,PNP,2SA1162 G
Q1821,1822	VSARNC1407///-1	J	AC	Digital,NPN,RNC1407
QT21	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR

DIODES

D2	VHD1SS133/-1	J	AA	Silicon,1SS133
D3~5	VHDRL104A/-1	J	AB	Silicon,RL104A
D8,9	VHD1SS133/-1	J	AA	Silicon,1SS133
D91	VHD1SS133/-1	J	AA	Silicon,1SS133
D301~304	VHD1SS133/-1	J	AA	Silicon,1SS133
D351~353	VHD1SS133/-1	J	AA	Silicon,1SS133
D557,558	VHD1SS133/-1	J	AA	Silicon,1SS133
D561,562	VHD1SS133/-1	J	AA	Silicon,1SS133
D631,632	VHD1SS133/-1	J	AA	Silicon,1SS133
D651,652	VHD1SS133/-1	J	AA	Silicon,1SS133
△D801~808	VHDRL204F/-1	J	AC	Silicon,RL204F
D809~812	VHDRL104A/-1	J	AB	Silicon,RL104A
D815~818	VHDRL104A/-1	J	AB	Silicon,RL104A
D821~823	VHD1SS133/-1	J	AA	Silicon,1SS133
D871	VHDRL104A/-1	J	AB	Silicon,RL104A
D902~905	VHD1SS133/-1	J	AA	Silicon,1SS133
D1251,1252	VHDSB0209CP-1	J	AC	Silicon,SB0209CP
D1990	VHD1SS372/-1	J	AD	Silicon,1SS372
ZD81	VHEMTZJ5R6B-1	J	AD	Zener,5.6V,MTZJ5.6B
ZD351	VHEMTZJ5R1B-1	J	AC	Zener,5.1V,MTZJ5.1B
ZD352	VHEMTZJ3R9B-1	J	AC	Zener,3.9V,MTZJ3.9B
ZD401,402	VHEMTZJ7R5B-1	J	AA	Zener,7.5V,MTZJ7.5B
ZD681	VHEMTZJ5R1B-1	J	AC	Zener,5.1V,MTZJ5.1B
ZD801	VHEMTZJ120C-1	J	AC	Zener,12V,MTZJ12C
ZD802	VHEMTZJ390A-1	J	AC	Zener,39V,MTZJ39A
ZD803	VHEMTZJ4R3B-1	J	AC	Zener,4.3V,MTZJ4.3B
ZD850	VHEMTZJ120A-1	J	AA	Zener,12V,MTZJ12A
ZD851	VHEMTZJ6R8B-1	J	AC	Zener,6.8V,MTZJ6.8B
ZD860	VHEMTZJ110A-1	J	AA	Zener,11V,MTZJ11A
ZD871	VHEMTZJ8R2B-1	J	AC	Zener,8.2V,MTZJ8.2B
ZD880	VHEMTZJ6R2B-1	J	AC	Zener,6.2V,MTZJ6.2B
ZDT21	VHEMTZJ5R1B-1	J	AC	Zener,5.1V,MTZJ5.1B

FILTERS

CF301,302	RFILF0072AFZZ	J	AG	FM IF
CF351	RFILF0003AWZZ	J	AK	FM IF
CF352	RFILA0009AWZZ	J	AE	AM IF

TRANSFORMERS

T302	RCILZ0014AWZZ	J	AL	AM Antenna
T351	RCILJ0011AWZZ	J	AD	AM IF
△T801	RTRNP0155AWZZ	J	BB	Power

COILS

J727	VP-XHR22K0000	J	AC	0.22 μH,Choke
L1	VP-XHR82K0000	J	AC	0.82 μH,Choke
L341	RBLN-0001AWZZ	J	AD	Balun
L342	VP-DH2R2K0000	J	AB	2.2 mmH,Peaking
L351,352	VP-DH101K0000	J	AB	100 μH,Choke
L353	VP-DH102K0000	J	AB	1 mH,Choke
L354	RFILL0001AWZZ	J	AE	Low Pass Filter
L621	VP-DH2R2K0000	J	AB	2.2 mmH,Peaking
L651~653	VP-DH2R2K0000	J	AB	2.2 mmH,Peaking
L655~657	VP-DH2R2K0000	J	AB	2.2 mmH,Peaking
L661,662	VP-XHR22K0000	J	AC	0.22 μH,Choke
L681	VP-XH2R2K0000	J	AB	2.2 μH,Choke
L731,732	VP-DH470K0000	J	AB	47 μH,Choke
L801,802	RCILZ0137AFZZ	J	AA	0.29 μH
L901	VP-DH2R2K0000	J	AB	2.2 mmH,Peaking
L904~906	VP-DH2R2K0000	J	AB	2.2 mmH,Peaking
L1101	VPBNN100K0000	J	AC	10 μH

NO.	PART CODE	★	PRICE RANK	DESCRIPTION
L1102	VPBNNR47K0000	J	AC	0.47 μH
L1201	VPBNNR47K0000	J	AC	0.47 μH
L1203	VPBNN4R7K0000	J	AC	4.7 μH
L1251	VP-NM470K0000	J	AC	47 μH
L1601	RCILZ0016AWZZ	J	AD	1 μH
L1701,1702	VPBNN100K0000	J	AC	10 μH
L1950	RCILZ0016AWZZ	J	AD	1 μH
LR190	VPBNN4R7K0000	J	AC	4.7 μH
LT21,22	VP-XH2R2K0000	J	AB	2.2 μH,Choke

VARIABLE RESISTORS

VR351	RVR-M0999AFZZ	J	AB	10 kohm (B),Semi-VR [FM Mute Level]
VR602	RVR-B0009AWZZ	J	AM	20 kohm (B),Semi-VR [INPUT LEVEL]

VIBRATORS

X351	RCRM-0028AWZZ	J	AE	Ceramic,456 kHz
X352	RCRSP0002AWZZ	J	AH	Crystal,4.5 MHz
X901	RCRSB0016AWZZ	J	AK	Crystal,8 MHz
XL1	RCRSP0005AWZZ	J	AF	Crystal,16.934 MHz
XL1201	RCRSC0001AWZZ	J	AL	Crystal,33.8688 MHz
XT21	RCRSB0030AWZZ	J	AH	Crystal,4.332 MHz

CAPACITORS

C2	RC-GZA476AF1A	J	AB	47 μF,10V,Electrolytic
C3	RC-GZA104AF1H	J	AB	0.1 μF,50V,Electrolytic
C4	VCKYTV1HB102K	J	AA	0.001 μF,50V
C5,6	VCKYTV1EB333K	J	AB	0.033 μF,25V
C7	RC-GZA104AF1H	J	AB	0.1 μF,50V,Electrolytic
C8	VCKYTV1EB683K	J	AA	0.068 μF,25V
C9	VCKYTV1EB473K	J	AB	0.047 μF,25V
C10	VCKYTV1HB181K	J	AB	180 pF,50V
C11	VCKRTV1CR104K	J	AA	0.1 μF,16V
C12	VCKYTV1HB331K	J	AA	330 pF,50V
C13	VCKRTV1CR104K	J	AA	0.1 μF,16V
C14	VCKYTV1EB103K	J	AA	0.01 μF,25V
C15	VCKYTV1HB472K	J	AA	0.0047 μF,50V
C16	VCKYTV1HB102K	J	AA	0.001 μF,50V
C17	RC-GZA474AF1H	J	AA	0.47 μF,50V,Electrolytic
C18	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C19	RC-GZA476AF1A	J	AB	47 μF,10V,Electrolytic
C20	VCKYTV1HB332K	J	AA	0.0033 μF,50V
C21	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C22	VCKYTV1EB103K	J	AA	0.01 μF,25V
C24	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C25	VCKYTV1EB103K	J	AA	0.01 μF,25V
C30	VCCSTV1HL2R0C	J	AA	2 pF,50V
C31	VCKYTV1HB272K	J	AA	0.0027 μF,50V
C32	VCCSTV1HL270J	J	AA	27 pF,50V
C33	VCKYTV1HB102K	J	AA	0.001 μF,50V
C34	VCKYTV1EB333K	J	AB	0.033 μF,25V
C35	RC-GZA104AF1H	J	AB	0.1 μF,50V,Electrolytic
C37	RC-GZA227AF0J	J	AB	220 μF,6.3V,Electrolytic
C38	VCKYTV1EB103K	J	AA	0.01 μF,25V
C39	RC-GZA474AF1H	J	AA	0.47 μF,50V,Electrolytic
C40	RC-GZA334AF1H	J	AA	0.33 μF,50V,Electrolytic
C41,42	VCKYTV1EF473Z	J	AB	0.047 μF,25V
C43,44	RC-GZA107AF1A	J	AB	100 μF,10V,Electrolytic
C45	RC-GZA475AF1E	J	AB	4.7 μF,25V,Electrolytic
C46	VCKYTV1EF223Z	J	AA	0.022 μF,25V
C50	VCKRTV1CR104K	J	AA	0.1 μF,16V
C51	VCKYTV1EF223Z	J	AA	0.022 μF,25V
C52	RC-GZA107AF1A	J	AB	100 μF,10V,Electrolytic
C53	VCKYTV1HB221K	J	AA	220 pF,50V
C54~58	VCKYTV1HB101K	J	AA	100 pF,50V
C59	VCKYTV1EF223Z	J	AA	0.022 μF,25V
C61	VCCCTV1HH120J	J	AA	12 pF (CH),50V
C62	VCCCTV1HH150J	J	AA	15 pF (CH),50V
C67,68	RC-GZA106AF1C	J	AB	10 μF,16V,Electrolytic
C69,70	VCKYTV1HB221K	J	AA	220 pF,50V
C71	RC-GZA476AF1A	J	AB	47 μF,10V,Electrolytic
C81	RC-GZA107AF1A	J	AB	100 μF,10V,Electrolytic
C91	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C92	VCKZPA1HF223Z	J	AA	0.022 μF,50V
C93	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C94	VCKYTV1EF223Z	J	AA	0.022 μF,25V
C95	VCKYTQ1HF104Z	J	AB	0.1 μF,50V
C96	RC-GZA104AF1H	J	AB	0.1 μF,50V,Electrolytic

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
C301	VCKYMN1HB102K	J	AA	0.001 μF,50V
C330	VCCUMN1HJ6R8D	J	AB	6.8 pF (UJ),50V
C331	VCKZPA1HF473Z	J	AA	0.047 μF,50V
C332,333	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C334	RC-GZA106AF1C	J	AB	10 μF,16V,Electrolytic
C340	RC-GZA107AF1C	J	AB	100 μF,16V,Electrolytic
C341,342	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C343,344	VCCSMN1HL330J	J	AA	33 pF,50V
C345~347	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C348	VCTYMN1CY103K	J	AA	0.01 μF,16V
C350,351	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C352	RC-GZA106AF1C	J	AB	10 μF,16V,Electrolytic
C353,354	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C355	VCCSMN1HL220J	J	AA	22 pF,50V
C356	VCKYMN1HB102K	J	AA	0.001 μF,50V
C357	RC-GZA225AF1H	J	AB	2.2 μF,50V,Electrolytic
C358	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C359	—	—	—	150 pF [CNW401 Ass'y]
C361	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C362	RC-GZA335AF1H	J	AB	3.3 μF,50V,Electrolytic
C363	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C364	RC-GZA106AF1C	J	AB	10 μF,16V,Electrolytic
C365	VCTYPA1CX223K	J	AA	0.022 μF,16V
C366	VCKYMN1HB102K	J	AA	0.001 μF,50V
C367,368	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C369	VCCSBT1HL270J	J	AA	27 pF,50V
C370~372	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C373,374	VCTYPA1CX393K	J	AB	0.039 μF,16V
C375	RC-GZA335AF1H	J	AB	3.3 μF,50V,Electrolytic
C380	RC-GZA106AF1C	J	AB	10 μF,16V,Electrolytic
C381	VCCCMN1HH120J	J	AA	12 pF (CH),50V
C382	VCCCMN1HH150J	J	AA	15 pF (CH),50V
C385	VCTYMN1CY103K	J	AA	0.01 μF,16V
C386	VCKYMN1HB331K	J	AA	330 pF,50V
C387	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C391	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C392	VCKYMN1HB102K	J	AA	0.001 μF,50V
C393	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C394	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C395	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C396	RC-GZA107AF1C	J	AB	100 μF,16V,Electrolytic
C397	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C398	RC-GZA107AF1A	J	AB	100 μF,10V,Electrolytic
C399	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C401,402	RC-GZA476AF1E	J	AB	47 μF,25V,Electrolytic
C403,404	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C407,408	RC-GZA106AF1H	J	AB	10 μF,50V,Electrolytic
C435	RC-GZA226AF1E	J	AB	22 μF,25V,Electrolytic
C501~508	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C511,512	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C515,516	RC-GZA225AF1H	J	AB	2.2 μF,50V,Electrolytic
C517,518	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C519,520	RC-GZA224AF1H	J	AA	0.22 μF,50V,Electrolytic
C521~524	RC-GZA154AF1H	J	AA	0.15 μF,50V,Electrolytic
C525,526	RC-GZA104AF1H	J	AB	0.1 μF,50V,Electrolytic
C527,528	RC-GZA224AF1H	J	AA	0.22 μF,50V,Electrolytic
C529,530	VCQYKA1HM273J	J	AB	0.027 μF,50V,Mylar
C531,532	VCQYKA1HM153J	J	AB	0.015 μF,50V,Mylar
C533,534	VCQYKA1HM222J	J	AB	0.0022 μF,50V,Mylar
C535,536	VCQYKA1HM472J	J	AB	0.0047 μF,50V,Mylar
C537,538	VCE9AA1HF105M	J	AC	1 μF,50V,Electrolytic,Non-polar
C539,540	RC-GZA106AF1C	J	AB	10 μF,16V,Electrolytic
C541,542	RC-GZA225AF1H	J	AB	2.2 μF,50V,Electrolytic
C543~546	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C549	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C550	RC-GZA337AF1C	J	AC	330 μF,16V,Electrolytic
C551~553	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C554	RC-GZA226AF1E	J	AB	22 μF,25V,Electrolytic
C555	VCKYPA1HB102K	J	AA	0.001 μF,50V
C557	RC-GZA476AF1H	J	AB	47 μF,50V,Electrolytic
C558,559	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C560	RC-GZA476AF1H	J	AB	47 μF,50V,Electrolytic
C561,562	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C565,566	VCCSMN1HL470J	J	AA	47 pF,50V
C567,568	RC-GZA226AF1H	J	AB	22 μF,50V,Electrolytic
C569	RC-GZA107AF1E	J	AB	100 μF,25V,Electrolytic
C571,572	VCKYPA1HB102K	J	AA	0.001 μF,50V
C573,574	VCKYMN1HB820K	J	AA	82 pF,50V
C575,576	RC-GZA226AF1H	J	AB	22 μF,50V,Electrolytic
C591	RC-GZA106AF1H	J	AB	10 μF,50V,Electrolytic
C592,593	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C594	RC-GZA106AF1H	J	AB	10 μF,50V,Electrolytic

MD-X5H/CP-X5H

NO.	PART CODE	★	PRICE RANK	DESCRIPTION
C625,626	VCKYPA1HF103Z	J	AB	0.01 μF,16V
C628	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C634	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C651,652	VCKYMN1HB331K	J	AA	330 pF,50V
C653,654	VCKYMN1HB391K	J	AA	390 pF,50V
C661,662	RC-GZA225AF1H	J	AB	2.2 μF,50V,Electrolytic
C663,664	VCTYMN1CX222K	J	AA	0.0022 μF,16V
C665,666	VCTYMN1CX822K	J	AA	8200 pF,16V
C667,668	VCKYMN1HB471K	J	AA	470 pF,50V
C669,670	RC-GZA226AF1H	J	AB	22 μF,50V,Electrolytic
C671,672	VCKYMN1CX122K	J	AA	0.0012 μF,16V
C673	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C674,675	VCTYMN1EF223Z	J	AA	0.022 μF,25V
C676	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C680	VCKYPA1HF473Z	J	AB	0.047 μF,50V
C681	VCTYPA1EF104Z	J	AA	0.1 μF,25V
C682	VCTYPA1EX103K	J	AA	0.01 μF,25V
C683	VCTYPA1EF104Z	J	AA	0.1 μF,25V
C684	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C685	VCTYPA1EF104Z	J	AA	0.1 μF,25V
C687	VCKYPA1HB102K	J	AA	0.001 μF,50V
C706	VCKYPA1HB101K	J	AA	100 pF,50V
C707	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C708	VCKYPA1HB101K	J	AA	100 pF,50V
C711~714	VCKYPA1HB391K	J	AA	390 pF,50V
C730	RC-EZD105AF1H	J	AB	1 μF,50V,Electrolytic
C731	RC-EZD106AF1C	J	AB	10 μF,16V,Electrolytic
C732	VCCCPA1HH270J	J	AA	27 pF (CH),50V
C743	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C744~746	RC-EZD105AF1H	J	AB	1 μF,50V,Electrolytic
C801~804	RC-QZA224AFYJ	J	AB	0.22 μF,50V,Mylar
C805	RC-GZV108AF1E	J	AD	1000 μF,25V,Electrolytic
C806,807	RC-GZA476AF1E	J	AB	47 μF,25V,Electrolytic
C808,809	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C810	RC-GZA104AF1H	J	AB	0.1 μF,50V,Electrolytic
C811	RC-GZA476AF1J	J	AC	47 μF,63V,Electrolytic
C812~814	RC-GZA476AF1H	J	AB	47 μF,50V,Electrolytic
C815	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C816	RC-GZA106AF1E	J	AA	10 μF,25V,Electrolytic
C817,818	RC-GZV227AF1H	J	AC	220 μF,50V,Electrolytic
C819	RC-GZV227AF1J	J	AD	220 μF,63V,Electrolytic
C821,822	VCTYPA1EX152K	J	AA	0.0015 μF,25V
C823,824	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C825,826	RC-GZA107AF1H	J	AC	100 μF,50V,Electrolytic
C827,828	VCKYPA1HB102K	J	AA	0.001 μF,50V
C829	RC-GZA337AF1V	J	AB	330 μF,35V,Electrolytic
C831,832	RC-GZA476AF1H	J	AB	47 μF,50V,Electrolytic
C833,834	RC-GZV108AF1E	J	AD	1000 μF,25V,Electrolytic
C837,838	VQYKA1HM104J	J	AC	0.1 μF,50V,Mylar
C839,840	VCKYPA1HB102K	J	AA	0.001 μF,50V
C841~848	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C849,850	VCKZPA1HF103Z	J	AA	0.01 μF,50V
C851	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C852	RC-GZA107AF1C	J	AB	100 μF,16V,Electrolytic
C853	RC-GZA476AF1E	J	AB	47 μF,25V,Electrolytic
C854	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C855	RC-GZA107AF1C	J	AB	100 μF,16V,Electrolytic
C856	RC-GZA476AF1E	J	AB	47 μF,25V,Electrolytic
C857,858	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C861	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C862	RC-GZA107AF1C	J	AB	100 μF,16V,Electrolytic
C863	RC-GZA476AF1E	J	AB	47 μF,25V,Electrolytic
C864	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C865,866	RC-GZA107AF1A	J	AB	100 μF,10V,Electrolytic
C867,868	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C870	RC-GZA107AF1A	J	AB	100 μF,10V,Electrolytic
C871	RC-GZA476AF1E	J	AB	47 μF,25V,Electrolytic
C872,873	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C875	RC-GZA227AF1A	J	AB	220 μF,10V,Electrolytic
C876	RC-GZA227AF1C	J	AB	220 μF,16V,Electrolytic
C880	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C881	VCTYPA1EF104Z	J	AA	0.1 μF,25V
C882	VCKZPA1HF103Z	J	AA	0.01 μF,50V
C883	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C884	RC-GZA227AF1C	J	AB	220 μF,16V,Electrolytic
C885	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C891	RC-GZA227AF1C	J	AB	220 μF,16V,Electrolytic
C892	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C895	RC-GZW228AF1H	J	AH	2200 μF,50V,Electrolytic
C896	92LCEU25W6800M	J	AP	6800 μF,25V,Electrolytic
C897	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C898	RC-GZA227AF1V	J	AD	220 μF,35V,Electrolytic

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
C899	RC-GZA335AF1H	J	AB	3.3 μF,50V,Electrolytic
C901	VCKYPA1HF473Z	J	AB	0.047 μF,50V
C908	VCCCTV1HH100D	J	AA	10 pF (CH),50V
C912	VCCCTV1HH150J	J	AA	15 pF (CH),50V
C913,914	VCKYTV1HB101K	J	AA	100 pF,50V
C915,916	VCKYTV1EF104Z	J	AA	0.1 μF,25V
C919,920	VCKYTV1HB101K	J	AA	100 pF,50V
C921	VCKYTV1EB223K	J	AB	0.022 μF,25V
C922	VCKRTV1CR104K	J	AA	0.1 μF,16V
C923~925	VCKYTQ1CF105Z	J	AC	1 μF,16V
C926	RC-GZA477AF0J	J	AB	470 μF,6.3V,Electrolytic
C927	RC-GZA227AF1A	J	AB	220 μF,10V,Electrolytic
C928	RC-GZA108AF0J	J	AC	1000 μF,6.3V,Electrolytic
C930	VCKYTV1HF104Z	J	AB	0.1 μF,50V
C933	VCKYTV1EF223Z	J	AA	0.022 μF,25V
C936	VCKYTV1EF104Z	J	AA	0.1 μF,25V
C937	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C1101	RC-KZ0003AWZZ	J	AE	4.7 μF,10V
C1102	VCKYTV0JB105K	J	AD	1 μF,6.3V
C1103	VCKYTV1CF105Z	J	AB	1 μF,16V
C1104	VCKYTV1HB273K	J	AA	0.027 μF,50V
C1105	VCKYTV0JB105K	J	AD	1 μF,6.3V
C1106	VCKYTV1CB474K	J	AC	0.47 μF,16V
C1107	VCKYTV1HB472K	J	AA	0.0047 μF,50V
C1109	VCKYTV0JB105K	J	AD	1 μF,6.3V
C1110	VCKYTV1CB474K	J	AC	0.47 μF,16V
C1112~1116	VCCCCY1HH271J	J	AA	270 pF (CH),50V
C1117	VCKYCY1HB332K	J	AA	0.0033 μF,50V
C1118	VCKYTV1HB333K	J	AA	0.033 μF,50V
C1119	VCCCCY1HH331J	J	AA	330 pF (CH),50V
C1121	VCKYTV1CF105Z	J	AB	1 μF,16V
C1145	VCKYCY1CB333K	J	AA	0.033 μF,16V
C1202,1203	VCKYTV1CF105Z	J	AB	1 μF,16V
C1204,1205	VCCCCY1HH120J	J	AA	12 pF (CH),50V
C1206,1207	VCKYTV1CF105Z	J	AB	1 μF,16V
C1208	VCKYCY1CB473K	J	AA	0.047 μF,16V
C1209~1211	VCKYTV1CF105Z	J	AB	1 μF,16V
C1251	VCKYCY1CB273K	J	AA	0.027 μF,16V
C1252	VCCCTV1HH121J	J	AA	120 pF (CH),50V
C1254	RC-KZ0002AWZZ	J	AE	10 μF,10V
C1255	RC-KZ0003AWZZ	J	AE	4.7 μF,10V
C1401,1402	VCKYCY1CB473K	J	AA	0.047 μF,16V
C1403	VCKYCY1HB681K	J	AA	680 pF,50V
C1405	VCKYCY1EF104Z	J	AA	0.1 μF,25V
C1406	VCKYTV1CF105Z	J	AB	1 μF,16V
C1407	VCKYCY1CB223K	J	AA	0.022 μF,16V
C1412	VCKYCY1HB681K	J	AA	680 pF,50V
C1421~1424	VCKYCY1CB223K	J	AA	0.022 μF,16V
C1425	VCKYCY1CB473K	J	AA	0.047 μF,16V
C1460	VCKYTV1CF105Z	J	AB	1 μF,16V
C1601,1602	RC-KZ0003AWZZ	J	AE	4.7 μF,10V
C1604	VCCCCY1HH560J	J	AA	56 pF (CH),50V
C1605	VCEAPS107AF1A	J	AD	100 μF,10V,Electrolytic
C1609	VCKYTQ1CF105Z	J	AC	1 μF,16V
C1610	RC-KZ0002AWZZ	J	AE	10 μF,10V
C1631	VCKYTV1CF105Z	J	AB	1 μF,16V
C1650~1653	VCCSCY1HL821J	J	AA	820 pF,50V
C1654,1655	VCKYCY1EB153K	J	AA	0.015 μF,25V
C1656,1657	VCKYCY1HB562K	J	AA	0.0056 μF,50V
C1661	VCEAPS107AF1A	J	AD	100 μF,10V,Electrolytic
C1700,1701	VCKYTV1HF103Z	J	AA	0.01 μF,50V
C1702	VCKYCY1CB473K	J	AA	0.047 μF,16V
C1703	VCEAPS476AF0G	J	AC	47 μF,4V,Electrolytic
C1704	VCKYTV1CF105Z	J	AB	1 μF,16V
C1706,1707	RC-EZ1620AFZZ	J	AC	10 μF,16V,Electrolytic
C1709	VCKYCY1CB473K	J	AA	0.047 μF,16V
C1710	VCEAPS476AF0G	J	AC	47 μF,4V,Electrolytic
C1711	VCKYTV1HF103Z	J	AA	0.01 μF,50V
C1712	VCEAPS476AF0G	J	AC	47 μF,4V,Electrolytic
C1714	VCEAPS476AF0G	J	AC	47 μF,4V,Electrolytic
C1715	VCEAPS226AF0G	J	AC	22 μF,4V,Electrolytic
C1716,1717	VCKYTV1HF103Z	J	AA	0.01 μF,50V
C1720	VCKYCY1CB103K	J	AA	0.01 μF,16V
C1722	VCCCCY1HH101J	J	AA	100 pF (CH),50V
C1724	VCCCCY1HH101J	J	AA	100 pF (CH),50V
C1729	VCCCCY1HH221J	J	AA	220 pF (CH),50V
C1743	VCEAPS476AF0G	J	AC	47 μF,4V,Electrolytic
C1801	VCKYTQ1CF225Z	J	AB	2.2 μF,16V
C1802	VCEAPS107AF1A	J	AD	100 μF,10V,Electrolytic
C1803	RC-KZ0002AWZZ	J	AE	10 μF,10V
C1805	VCKYTV1CF105Z	J	AB	1 μF,16V
C1806	RC-KZ0002AWZZ	J	AE	10 μF,10V

NO.	PART CODE	★	PRICE RANK	DESCRIPTION	NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
C1807	VCEAPS227AF0G	J	AC	220 μF,4V,Electrolytic	R57	VRS-TV2AB273J	J	AA	27 kohms,1/10W
C1810	VCKYTV1CF105Z	J	AB	1 μF,16V	R58	VRS-TV2AB681J	J	AA	680 ohms,1/10W
C1904	VCKYTQ1CB334K	J	AC	0.33 μF,16V	R60	VRS-TV2AB102J	J	AA	1 kohm,1/10W
C1913	VCCCCY1HH220J	J	AA	22 pF (CH),50V	R61	VRS-TV2AB221J	J	AA	220 ohms,1/10W
C1927	VCKYCY1CB473K	J	AA	0.047 μF,16V	R62-65	VRS-TV2AB823J	J	AA	82 kohms,1/10W
C1951	VCKYCY1CB473K	J	AA	0.047 μF,16V	R66,67	VRS-TV2AB683J	J	AA	68 kohms,1/10W
C1952	VCKYCY1CB103K	J	AA	0.01 μF,16V	R70	VRS-TV2AB331J	J	AA	330 ohms,1/10W
C1953	VCKYTV1CB474K	J	AC	0.47 μF,16V	R71	VRS-TV2AB473J	J	AA	47 kohms,1/10W
C1954	VCCCCY1HH150J	J	AA	15 pF (CH),50V	R73,74	VRS-TV2AB822J	J	AA	8.2 kohms,1/10W
C1955	VCKYCY1CB473K	J	AA	0.047 μF,16V	R75,76	VRS-TV2AB272J	J	AA	2.7 kohms,1/10W
C1956	VCEAPS476AF0J	J	AC	47 μF,6.3V,Electrolytic	R77,78	VRS-TV2AB102J	J	AA	1 kohm,1/10W
C1957	VCEAPS107AF0J	J	AC	100 μF,6.3V,Electrolytic	R81	VRD-ST2EE221J	J	AA	220 ohms,1/4W
C1958	VCKYCY1CB473K	J	AA	0.047 μF,16V	R82	VRS-TV2AB101J	J	AA	100 ohm,1/10W
C1964	VCKYCY1HB102K	J	AA	0.001 μF,50V	R84	VRD-ST2EE220J	J	AA	22 ohms,1/4W
C1990	VCKYTV0JB105K	J	AD	1 μF,6.3V	R86,87	VRS-TV2AB102J	J	AA	1 kohm,1/10W
C1991	RC-KZ0002AWZZ	J	AE	10 μF,10V	R91	VRD-ST2CD333J	J	AA	33 kohms,1/6W
C1992	VCKYCY1EF104Z	J	AA	0.1 μF,25V	R93	VRD-RT2HD2R2J	J	AA	2.2 ohms,1/2W
CJ172	VCCCCY1HH221J	J	AA	220 pF (CH),50V	R97	VRS-TV2AB562J	J	AA	5.6 kohms,1/10W
CT21	RC-EZD476AF1A	J	AC	47 μF,10V,Electrolytic	R98	VRS-TV2AB472J	J	AA	4.7 kohms,1/10W
CT22	VCTYMN1EF223Z	J	AA	0.022 μF,25V	R301	VRD-MN2BD121J	J	AA	120 ohms,1/8W
CT23	RC-EZD106AF1C	J	AB	10 μF,16V,Electrolytic	R319	VRD-MN2BD104J	J	AA	100 kohm,1/8W
CT24	VCTYMN0JY223M	J	AB	0.022 μF,6.3V	R324	VRD-ST2CD103J	J	AA	10 kohm,1/6W
CT25	VCKYMN1HB561K	J	AA	560 pF,50V	R344	VRD-MN2BD471J	J	AA	470 ohms,1/8W
CT26,27	VCCCMN1HH220J	J	AA	22 pF (CH),50V	R345	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
CT28	RC-EZD476AF1A	J	AC	47 μF,10V,Electrolytic	R346	VRD-MN2BD331J	J	AA	330 ohms,1/8W
CT29	VCTYMN1EF223Z	J	AA	0.022 μF,25V	R347	VRD-MN2BD682J	J	AA	6.8 kohms,1/8W
CT36	VCKYPA1HF223Z	J	AB	0.022 μF,50V	R348	VRD-MN2BD681J	J	AA	680 ohms,1/8W
CT37	VCTYMN1EF223Z	J	AA	0.022 μF,25V	R349	VRD-ST2CD330J	J	AA	33 ohms,1/6W
CT43	RC-EZD106AF1C	J	AB	10 μF,16V,Electrolytic	R350	VRD-ST2CD272J	J	AA	2.7 kohms,1/6W
JC121	VCKYCY1CB473K	J	AA	0.047 μF,16V	R351	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
RESISTORS					R352	VRD-MN2BD102J	J	AA	1 kohm,1/8W
	VRD-MN2BD000C	J	AA	0 ohm,Jumper,ø1.4×3.5mm,Ivory	R353	VRD-MN2BD271J	J	AA	270 ohms,1/8W
	VRS-CY1JB000J	J	AA	0 ohm,Jumper,0.8×1.55mm,Green	R354	VRD-ST2CD392J	J	AA	3.9 kohms,1/6W
	VRS-TV2AB000J	J	AA	0 ohm,Jumper,1.25×2mm,Green	R355	VRD-MN2BD332J	J	AA	3.3 kohms,1/8W
△ FR805	VRG-ST2EF560J	J	AB	56 ohms,1/4W,Fusible	R356	VRD-MN2BD102J	J	AA	1 kohm,1/8W
△ FR833,834	VRG-ST2EG4R7J	J	AB	4.7 ohms,1/4W,Fusible	R357	VRD-ST2CD474J	J	AA	470 kohms,1/6W
△ FR850,851	VRG-ST2EG2R2J	J	AB	2.2 ohms,1/4W,Fusible	R358	VRD-MN2BD822J	J	AA	8.2 kohms,1/8W
J1405	VRS-CY1JB103J	J	AA	10 kohm,1/16W	R359	VRD-MN2BD182J	J	AA	1.8 kohms,1/8W
R2	VRS-TV2AB104J	J	AA	100 kohm,1/10W	R360	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R3	VRS-TV2AB153J	J	AA	15 kohms,1/10W	R361,362	VRD-MN2BD471J	J	AA	470 ohms,1/8W
R4	VRS-TV2AB222J	J	AA	2.2 kohms,1/10W	R363,364	VRD-MN2BD392J	J	AA	3.9 kohms,1/8W
R5	VRS-TV2AB682J	J	AA	6.8 kohms,1/10W	R365,366	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R6	VRS-TV2AB101J	J	AA	100 ohm,1/10W	R367	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R7	VRS-TV2AB102J	J	AA	1 kohm,1/10W	R368	VRD-ST2CD333J	J	AA	33 kohms,1/6W
R8	VRS-TV2AB123J	J	AA	12 kohms,1/10W	R369	VRD-MN2BD820J	J	AA	82 ohms,1/8W
R9	VRS-TV2AB273J	J	AA	27 kohms,1/10W	R370-374	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R10	VRS-TV2AB823J	J	AA	82 kohms,1/10W	R376	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R11	VRS-TV2AB332J	J	AA	3.3 kohms,1/10W	R377	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R12	VRS-TV2AB153J	J	AA	15 kohms,1/10W	R378	VRD-MN2BD823J	J	AA	82 kohms,1/8W
R13	VRS-TV2AB333J	J	AA	33 kohms,1/10W	R379	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R14	VRS-TV2AB103J	J	AA	10 kohm,1/10W	R380	VRD-MN2BD152J	J	AA	1.5 kohms,1/8W
R15	VRS-TV2AB473J	J	AA	47 kohms,1/10W	R381	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R16	VRS-TV2AB152J	J	AA	1.5 kohms,1/10W	R382	VRD-ST2EE151J	J	AA	150 ohms,1/4W
R17	VRS-TV2AB823J	J	AA	82 kohms,1/10W	R383-385	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R18	VRS-TV2AB335J	J	AA	3.3 Mohms,1/10W	R387	VRD-MN2BD223J	J	AA	22 kohms,1/8W
R19	VRS-TV2AB393J	J	AA	39 kohms,1/10W	R391,392	VRD-ST2EE391J	J	AA	390 ohms,1/4W
R20	VRS-TV2AB103J	J	AA	10 kohm,1/10W	R393	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R21	VRS-TV2AB563J	J	AA	56 kohms,1/10W	R395	VRD-ST2CD473J	J	AA	47 kohms,1/6W
R22	VRS-TV2AB682J	J	AA	6.8 kohms,1/10W	R399	VRD-MN2BD330J	J	AA	33 ohms,1/8W
R23	VRS-TV2AB122J	J	AA	1.2 kohms,1/10W	R401,402	VRD-RT2HD561J	J	AA	560 ohms,1/2W
R24	VRS-TV2AB103J	J	AA	10 kohm,1/10W	R403,404	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R25	VRS-TV2AB122J	J	AA	1.2 kohms,1/10W	R407,408	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R26,27	VRS-TV2AB224J	J	AA	220 kohms,1/10W	R409,410	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R28,29	VRS-TV2AB102J	J	AA	1 kohm,1/10W	R427,428	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R30	VRS-TV2AB223J	J	AA	22 kohms,1/10W	R429,430	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R31	VRS-TV2AB103J	J	AA	10 kohm,1/10W	R431,432	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R32	VRS-TV2AB563J	J	AA	56 kohms,1/10W	R433	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R33	VRS-TV2AB562J	J	AA	5.6 kohms,1/10W	R461,462	VRD-ST2CD392J	J	AA	3.9 kohms,1/6W
R34	VRS-TV2AB102J	J	AA	1 kohm,1/10W	R463,464	VRD-ST2CD122J	J	AA	1.2 kohms,1/6W
R35	VRS-TV2AB471J	J	AA	470 ohms,1/10W	R501,502	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R36,37	VRS-TV2AB473J	J	AA	47 kohms,1/10W	R503,504	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R38	VRS-TV2AB333J	J	AA	33 kohms,1/10W	R505,506	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R39,40	VRS-TV2AB223J	J	AA	22 kohms,1/10W	R509,510	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R41	VRS-TV2AB472J	J	AA	4.7 kohms,1/10W	R511-518	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R42	VRS-TV2AB561J	J	AA	560 ohms,1/10W	R523	VRD-ST2CD153J	J	AA	15 kohms,1/6W
R43	VRD-ST2EE220J	J	AA	22 ohms,1/4W	R525	VRD-MN2BD223J	J	AA	22 kohms,1/8W
R45-48	VRS-TV2AB102J	J	AA	1 kohm,1/10W	R528-530	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R49	VRS-TV2AB103J	J	AA	10 kohm,1/10W	R532	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R56	VRS-TV2AB122J	J	AA	1.2 kohms,1/10W	R533	VRD-MN2BD102J	J	AA	1 kohm,1/8W
					R551	VRD-ST2CD473J	J	AA	47 kohms,1/6W
					R552	VRD-MN2BD473J	J	AA	47 kohms,1/8W
					R553,554	VRD-MN2BD683J	J	AA	68 kohms,1/8W

MD-X5H/CP-X5H

NO.	PART CODE	★	PRICE RANK	DESCRIPTION
R555	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R556	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R557,558	VRD-MN2BD272J	J	AA	2.7 kohms,1/8W
R559,560	VRD-ST2EE221J	J	AA	220 ohms,1/4W
R561	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R562	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
R565,566	VRD-MN2BD822J	J	AA	8.2 kohms,1/8W
R569,570	VRD-MN2BD183J	J	AA	18 kohms,1/8W
R597,598	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R625,626	VRD-ST2EE560J	J	AA	56 ohms,1/4W
R651,652	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R653,654	VRD-MN2BD392J	J	AA	3.9 kohms,1/8W
R655,656	VRD-MN2BD273J	J	AA	27 kohms,1/8W
R661,662	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R663,664	VRD-MN2BD333J	J	AA	33 kohms,1/8W
R665,666	VRD-MN2BD394J	J	AA	390 kohms,1/8W
R667,668	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R669,670	VRD-MN2BD332J	J	AA	3.3 kohms,1/8W
R671,672	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R673,674	VRD-MN2BD332J	J	AA	3.3 kohms,1/8W
R675,676	VRD-ST2EE331J	J	AA	330 ohms,1/4W
R680	VRD-MN2BD563J	J	AA	56 kohms,1/8W
R681	VRD-MN2BD272J	J	AA	2.7 kohms,1/8W
R682	VRD-MN2BD224J	J	AA	220 kohms,1/8W
R683	VRD-MN2BD331J	J	AA	330 ohms,1/8W
R684	VRD-ST2CD820J	J	AA	82 ohms,1/6W
R691,692	VRD-MN2BD223J	J	AA	22 kohms,1/8W
R693,694	VRD-MN2BD682J	J	AA	6.8 kohms,1/8W
R695,696	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R697,698	VRD-ST2CD182J	J	AA	1.8 kohms,1/6W
R701	VRD-ST2CD122J	J	AA	1.2 kohms,1/6W
R703	VRD-ST2CD332J	J	AA	3.3 kohms,1/6W
R704	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
R705	VRD-ST2CD332J	J	AA	3.3 kohms,1/6W
R706	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
R707	VRD-ST2CD822J	J	AA	8.2 kohms,1/6W
R708	VRD-ST2CD183J	J	AA	18 kohms,1/6W
R711	VRD-ST2CD122J	J	AA	1.2 kohms,1/6W
R712	VRD-ST2CD152J	J	AA	1.5 kohms,1/6W
R713	VRD-ST2CD123J	J	AA	12 kohms,1/6W
R725	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R726	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
R727	VRD-ST2CD822J	J	AA	8.2 kohms,1/6W
R728	VRD-ST2CD183J	J	AA	18 kohms,1/6W
R729	VRD-ST2CD473J	J	AA	47 kohms,1/6W
R731	VRD-ST2CD122J	J	AA	1.2 kohms,1/6W
R732	VRD-ST2CD152J	J	AA	1.5 kohms,1/6W
R733	VRD-ST2CD182J	J	AA	1.8 kohms,1/6W
R734	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
R735	VRD-ST2CD332J	J	AA	3.3 kohms,1/6W
R736	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
R737	VRD-ST2CD822J	J	AA	8.2 kohms,1/6W
R738	VRD-ST2CD183J	J	AA	18 kohms,1/6W
R743	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R744	VRD-ST2CD101J	J	AA	100 ohm,1/6W
R751	VRD-ST2CD104J	J	AA	100 kohm,1/6W
R753	VRD-ST2CD104J	J	AA	100 kohm,1/6W
R755	VRD-ST2CD104J	J	AA	100 kohm,1/6W
R757	VRD-ST2CD104J	J	AA	100 kohm,1/6W
R776	VRD-ST2CD683J	J	AA	68 kohms,1/6W
R802	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R803	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R804	VRD-ST2CD123J	J	AA	12 kohms,1/6W
R814	VRD-ST2CD101J	J	AA	100 ohm,1/6W
R815	VRD-ST2CD332J	J	AA	3.3 kohms,1/6W
R816	VRD-ST2EE221J	J	AA	220 ohms,1/4W
R818	VRD-ST2CD122J	J	AA	1.2 kohms,1/6W
R819	VRD-ST2CD562J	J	AA	5.6 kohms,1/6W
R821,822	VRD-ST2CD333J	J	AA	33 kohms,1/6W
R823,824	VRD-ST2CD331J	J	AA	330 ohms,1/6W
R825,826	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R827	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R828	VRD-ST2CD471J	J	AA	470 ohms,1/6W
R829,830	VRD-RT2HD271J	J	AA	270 ohms,1/2W
R831	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R832	VRS-VV3LA681J	J	AC	680 kohms,3W,Metal Oxide Film
R835~838	VRD-ST2EE6R8J	J	AA	6.8 ohms,1/4W
R839	VRD-ST2CD100J	J	AA	10 ohm,1/6W
R850	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
R851	VRD-ST2EE221J	J	AA	220 ohms,1/4W
R852	VRD-ST2EE471J	J	AA	470 ohms,1/4W
R853	VRD-ST2EE221J	J	AA	220 ohms,1/4W

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
R861	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
R862	VRD-ST2EE221J	J	AA	220 ohms,1/4W
R863	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
R865	VRD-ST2EE151J	J	AA	150 ohms,1/4W
R866	VRD-ST2EE101J	J	AA	100 ohm,1/4W
R872,873	VRD-ST2EE221J	J	AA	220 ohms,1/4W
R880	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R881	VRD-RT2HD471J	J	AA	470 ohms,1/2W
R883	VRD-ST2CD223J	J	AA	22 kohms,1/6W
R884	VRD-ST2CD683J	J	AA	68 kohms,1/6W
R886	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R887	VRD-ST2CD154J	J	AA	150 kohms,1/6W
R888	VRD-ST2CD225J	J	AA	2.2 Mohms,1/6W
R889	VRD-ST2CD224J	J	AA	220 kohms,1/6W
R891	VRD-ST2EE561J	J	AA	560 ohms,1/4W
R895	VRD-ST2EE271J	J	AA	270 ohms,1/4W
R896	VRD-ST2CD682J	J	AA	6.8 kohms,1/6W
R897	VRD-ST2CD104J	J	AA	100 kohm,1/6W
R913,914	VRS-TV2AB562J	J	AA	5.6 kohms,1/10W
R921~923	VRS-TV2AB223J	J	AA	22 kohms,1/10W
R929	VRS-TV2AB475J	J	AA	4.7 Mohms,10W
R933,934	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R939	VRS-TV2AB182J	J	AA	1.8 kohms,1/10W
R940,941	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R944,945	VRS-TV2AB101J	J	AA	100 ohm,1/10W
R946	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R948~950	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R951	VRS-TV2AB103J	J	AA	10 kohm,1/10W
R952	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R953	VRS-TV2AB103J	J	AA	10 kohm,1/10W
R954	VRS-TV2AB224J	J	AA	220 kohms,1/10W
R955	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R956	VRS-TV2AB103J	J	AA	10 kohm,1/10W
R957	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R958	VRS-TV2AB103J	J	AA	10 kohm,1/10W
R961,962	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R964	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R966	VRS-TV2AB332J	J	AA	3.3 kohms,1/10W
R967	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R976	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R977	VRS-TV2AB101J	J	AA	100 ohm,1/10W
R978,979	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R981~984	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R986	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R988	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R990~996	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R998~1004	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R1006	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R1008~1011	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R1014~1016	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R1018~1021	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R1022	VRS-TV2AB223J	J	AA	22 kohms,1/10W
R1025,1026	VRS-TV2AB223J	J	AA	22 kohms,1/10W
R1027	VRS-TV2AB334J	J	AA	330 kohms,1/10W
R1028~1031	VRS-TV2AB223J	J	AA	22 kohms,1/10W
R1033,1034	VRS-TV2AB103J	J	AA	10 kohm,1/10W
R1036,1037	VRS-TV2AB103J	J	AA	10 kohm,1/10W
R1038,1039	VRS-TV2AB474J	J	AA	470 kohms,1/10W
R1040	VRS-TV2AB101J	J	AA	100 ohm,1/10W
R1044	VRD-ST2CD820J	J	AA	82 ohms,1/6W
R1046	VRS-TV2AB103J	J	AA	10 kohm,1/10W
R1047	VRS-TV2AB473J	J	AA	47 kohms,1/10W
R1058	VRS-TV2AB681J	J	AA	680 ohms,1/10W
R1061,1062	VRS-TV2AB103J	J	AA	10 kohm,1/10W
R1063	VRS-TV2AB474J	J	AA	470 kohms,1/10W
R1100	VRS-TQ2BB270J	J	AA	27 ohms,1/8W
R1100A	VRS-TV2AB473J	J	AA	47 kohms,1/10W
R1102	VRS-CY1JB561J	J	AA	560 ohms,1/16W
R1105	VRS-CY1JB394J	J	AA	390 kohms,1/16W
R1106	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1107	VRS-CY1JB1R0J	J	AA	1 ohm,1/16W
R1150~1154	VRS-CY1JB223J	J	AA	22 kohms,1/16W
R1155	VRS-CY1JB563J	J	AA	56 kohms,1/16W
R1166	VRS-CY1JB122J	J	AA	1.2 kohms,1/16W
R1201	VRS-CY1JB151J	J	AA	150 ohms,1/16W
R1202	VRS-CY1JB105J	J	AA	1 Mohm,1/16W
R1210	VRS-CY1JB101J	J	AA	100 ohm,1/16W
R1211	VRS-CY1JB221J	J	AA	220 ohms,1/16W
R1221	VRS-CY1JB221J	J	AA	220 ohms,1/16W
R1223	VRS-TV2AB681J	J	AA	680 ohms,1/10W
R1251	VRS-CY1JB100J	J	AA	10 ohm,1/16W
R1254	VRS-TV2AB221J	J	AA	220 ohms,1/10W

NO.	PART CODE	★ PRICE RANK	DESCRIPTION
R1261~1263	VRS-CY1JB103J	J AA	10 kohm,1/16W
R1266	VRS-CY1JB103J	J AA	10 kohm,1/16W
R1281	VRS-CY1JB470J	J AA	47 ohms,1/16W
R1401	VRS-CY1JB102J	J AA	1 kohm,1/16W
R1404	VRS-CY1JB102J	J AA	1 kohm,1/16W
R1406,1407	VRS-CY1JB332J	J AA	3.3 kohms,1/16W
R1408	VRS-CY1JB104J	J AA	100 kohm,1/16W
R1409	VRS-CY1JB102J	J AA	1 kohm,1/16W
R1412	VRS-CY1JB104J	J AA	100 kohm,1/16W
R1413	VRS-CY1JB332J	J AA	3.3 kohms,1/16W
R1414	VRS-CY1JB103J	J AA	10 kohm,1/16W
R1415	VRS-CY1JB102J	J AA	1 kohm,1/16W
R1416	VRS-CY1JB103J	J AA	10 kohm,1/16W
R1418	VRS-CY1JB473J	J AA	47 kohms,1/16W
R1420	VRS-CY1JB102J	J AA	1 kohm,1/16W
R1422~1424	VRS-CY1JB103J	J AA	10 kohm,1/16W
R1425	VRS-CY1JB272J	J AA	2.7 kohms,1/16W
R1426	VRS-CY1JB102J	J AA	1 kohm,1/16W
R1427	VRS-CY1JB472J	J AA	4.7 kohms,1/16W
R1428	VRS-CY1JB102J	J AA	1 kohm,1/16W
R1429,1430	VRS-CY1JB103J	J AA	10 kohm,1/16W
R1452	VRS-CY1JB332J	J AA	3.3 kohms,1/16W
R1454	VRS-CY1JB102J	J AA	1 kohm,1/16W
R1456	VRS-CY1JB102J	J AA	1 kohm,1/16W
R1458	VRS-CY1JB682J	J AA	6.8 kohms,1/16W
R1459	VRS-CY1JB103J	J AA	10 kohm,1/16W
R1460	VRS-CY1JB682J	J AA	6.8 kohms,1/16W
R1461	VRS-CY1JB103J	J AA	10 kohm,1/16W
R1462	VRS-CY1JB682J	J AA	6.8 kohms,1/16W
R1463	VRS-CY1JB103J	J AA	10 kohm,1/16W
R1464	VRS-CY1JB221J	J AA	220 ohms,1/16W
R1466	VRS-CY1JB221J	J AA	220 ohms,1/16W
R1471	VRS-CY1JB103J	J AA	10 kohm,1/16W
R1472	VRS-CY1JB473J	J AA	47 kohms,1/16W
R1473	VRS-CY1JB104J	J AA	100 kohm,1/16W
R1474~1476	VRS-CY1JB102J	J AA	1 kohm,1/16W
R1478	VRS-CY1JB103J	J AA	10 kohm,1/16W
R1609	VRS-CY1JB152J	J AA	1.5 kohms,1/16W
R1610	VRS-CY1JB303D	J AA	30 kohms,1/16W
R1611	VRS-CY1JB123D	J AA	12 kohms,1/16W
R1612	VRS-CY1JB563J	J AA	56 kohms,1/16W
R1613	VRS-CY1JB273J	J AA	27 kohms,1/16W
R1614	VRS-CY1JB183D	J AA	18 kohms,1/16W
R1617	VRS-CY1JB473J	J AA	47 kohms,1/16W
R1650	VRS-CY1JB103J	J AA	10 kohm,1/16W
R1651	VRS-CY1JB104J	J AA	100 kohm,1/16W
R1652	VRS-CY1JB103J	J AA	10 kohm,1/16W
R1653	VRS-CY1JB104J	J AA	100 kohm,1/16W
R1654	VRS-CY1JB682J	J AA	6.8 kohms,1/16W
R1655	VRS-CY1JB124J	J AA	120 kohms,1/16W
R1656	VRS-CY1JB682J	J AA	6.8 kohms,1/16W
R1657	VRS-CY1JB124J	J AA	120 kohms,1/16W
R1658	VRS-CY1JB153J	J AA	15 kohms,1/16W
R1659	VRS-CY1JB823J	J AA	82 kohms,1/16W
R1660	VRS-CY1JB153J	J AA	15 kohms,1/16W
R1661	VRS-CY1JB823J	J AA	82 kohms,1/16W
R1662	VRS-CY1JB103J	J AA	10 kohm,1/16W
R1663	VRS-CY1JB623J	J AA	62 kohms,1/16W
R1664	VRS-CY1JB103J	J AA	10 kohm,1/16W
R1665	VRS-CY1JB623J	J AA	62 kohms,1/16W
R1666,1667	VRS-CY1JB223J	J AA	22 kohms,1/16W
R1668,1669	VRS-CY1JB682J	J AA	6.8 kohms,1/16W
R1701	VRS-CY1JB105J	J AA	1 Mohm,1/16W
R1702	VRS-CY1JB684J	J AA	680 kohms,1/16W
R1707,1708	VRS-CY1JB432J	J AA	4.3 kohms,1/16W
R1710	VRS-CY1JB303J	J AA	30 kohms,1/16W
R1711	VRS-CY1JB393J	J AA	39 kohms,1/16W
R1712	VRS-CY1JB104J	J AA	100 kohm,1/16W
R1713,1714	VRS-CY1JB393J	J AA	39 kohms,1/16W
R1715	VRS-CY1JB102D	J AA	1 kohm,1/16W
R1716	VRS-CY1JB332D	J AA	3.3 kohms,1/16W
R1717	VRS-CY1JB821J	J AA	820 ohms,1/16W
R1731	VRS-CY1JB470J	J AA	47 ohms,1/16W
R1733	VRS-CY1JB470J	J AA	47 ohms,1/16W
R1734,1735	VRS-CY1JB473J	J AA	47 kohms,1/16W
R1801	VRS-CY1JB182J	J AA	1.8 kohms,1/16W
R1802	VRS-CY1JB271J	J AA	270 ohms,1/16W
R1804	VRS-CY1JB224D	J AA	220 kohms,1/16W
R1805	VRS-CY1JB104D	J AA	100 kohm,1/16W
R1806,1807	VRS-TV2AB120J	J AA	12 ohms,1/10W
R1808	VRS-CY1JB273J	J AA	27 kohms,1/16W
R1809	VRS-CY1JB391J	J AA	390 ohms,1/16W

NO.	PARTS CODE	★ PRICE RANK	DESCRIPTION
R1810	VRS-CY1JB102J	J AA	1 kohm,1/16W
R1811	VRS-CY1JB273J	J AA	27 kohms,1/16W
R1820,1821	VRS-TV2AB1R0J	J AA	1 ohm,1/10W
R1827	VRS-CY1JB271J	J AA	270 ohms,1/16W
R1901	VRS-TV2AB471J	J AA	470 ohms,1/10W
R1902	VRS-TV2AB182J	J AA	1.8 kohms,1/10W
R1903,1904	VRS-TV2AB821J	J AA	820 ohms,1/10W
R1927	VRS-TV2AB220J	J AA	22 ohms,1/10W
R1939	VRS-CY1JB102J	J AA	1 kohm,1/16W
R1947	VRS-TV2AB470J	J AA	47 ohms,1/10W
R1961	VRS-CY1JB101J	J AA	100 ohm,1/16W
R1962	VRS-CY1JB224J	J AA	220 kohms,1/16W
R1963	VRS-CY1JB152J	J AA	1.5 kohms,1/16W
R1964	VRS-CY1JB682J	J AA	6.8 kohms,1/16W
R1965	VRS-CY1JB103J	J AA	10 kohm,1/16W
R1967	VRS-CY1JB470J	J AA	47 ohms,1/16W
R1968	VRS-CY1JB221J	J AA	220 ohms,1/16W
R1969	VRS-TQ2BB560J	J AA	56 ohms,1/8W
R1973	VRS-CY1JB682J	J AA	6.8 kohms,1/16W
R1974	VRS-CY1JB221J	J AA	220 ohms,1/16W
R1994,1995	VRS-CY1JB222J	J AA	2.2 kohms,1/16W
RC120	VRS-CY1JB221J	J AA	220 ohms,1/16W
△ RP881	RH-QX0003AWZZ	J AK	Posistor,2.2 ohms
RT21	VRD-MN2BD104J	J AA	100 kohm,1/8W
RT26	VRD-MN2BD102J	J AA	1 kohm,1/8W
RT28	VRD-MN2BD102J	J AA	1 kohm,1/8W
RT29	VRD-ST2CD102J	J AA	1 kohm,1/6W
RT30	VRD-MN2BD102J	J AA	1 kohm,1/8W
RT32	VRD-ST2CD103J	J AA	10 kohm,1/6W
RT33,34	VRD-ST2CD563J	J AA	56 kohms,1/6W
RT35~37	VRD-ST2CD224J	J AA	220 kohms,1/6W
RT48,49	VRD-ST2EE391J	J AA	390 ohms,1/4W
RT55	VRD-ST2CD223J	J AA	22 kohms,1/6W

OTHER CIRCUITRY PARTS

BI1/CNS1	QCNCWN1002AWZZ	J AK	Connector Ass'y,7-7Pin
BI2/CNS2	QCNCWN1003AWZZ	J AK	Connector Ass'y,8-8Pin
BI3/CNS3	QCNCWN1004AWZZ	J AH	Connector Ass'y,6-6Pin
BI410/CNS410	QCNCWN1034AWZZ	J AT	Connector Ass'y,6-6Pin
BI420/CNS420	QCNCWN0991AWZZ	J AF	Connector Ass'y,4-4Pin
BI801/CNS801	QCNCWN0995AWZZ	J AE	Connector Ass'y,3-3Pin
BI810/CNS810	QCNCWN1134AWZZ	J AL	Connector Ass'y,7-7Pin
BI820/CNS820	QCNCWN1029AWZZ	J AG	Connector Ass'y,7-7Pin
BI906/CNS906	QCNCWN1013AWZZ	J AG	Connector Ass'y,5-5Pin
BI907/CNS907	QCNCWN1000AWZZ	J AF	Connector Ass'y,4-4Pin
BI936A/B	QCNCWN1001AWZZ	J AG	Connector Ass'y,2-2Pin
CN1602	QCNCM890BAF02	J AD	Plug,2Pin
CN1603	QCNCM890BAFZZ	J AC	Plug,2Pin
CN1604	QCNCM890BAF06	J AD	Plug,2Pin
CNP3	92LCONE6P53254	J AC	Plug,6Pin
CNP10	92LCONE5P53253	J AB	Plug,5Pin
CNP301	92LCONE-2P5268	J AB	Plug,2Pin
CNP303	92LCONE8P52147	J AD	Socket,Wire Trap,8Pin
CNP410	92LCONE6P53253	J AC	Plug,6Pin
CNP420	92LCONE4P53253	J AB	Plug,4Pin
CNP801	92LCONE3P5267X	J AB	Plug,3Pin
CNP810	92LCONE7P53253	J AC	Plug,7Pin
CNP820	92LCONE7P5268	J AE	Plug,7Pin
CNP870	92LCONE2P53253	J AB	Plug,2Pin
CNP901	QCNCWZJ24AWZZ	J AK	Socket,24Pin
CNP902	92LCONEBP52147	J AD	Socket,Wire Trap,11Pin
CNP903	QCNCM010PAWZZ	J AD	Plug,14Pin
CNP904	QCNCM010MAWZZ	J AC	Plug,12Pin
CNP906	92LCONE5P53253	J AB	Plug,5Pin
CNP907	92LCONE4P53253	J AB	Plug,4Pin
CNP908	92LCONPB2BPHK	J AB	Plug,2Pin
CNP1101	QCNCWY028AFZZ	J AE	Plug,23Pin
CNP1252	QCNCM891BAFZZ	J AC	Plug,2Pin
CNP1601	QCNCWXC05AFZZ	J AC	Plug,5Pin
CNP1902	QCNCWZC24AWZZ	J AH	Socket,24Pin
CNP1904	QCNCM891DAFZZ	J AD	Plug,4Pin
CNS10	QCNCWN1030AWZZ	J AF	Connector Ass'y,5Pin
CNS870	QCNCWN1123AWZZ	J AC	Connector Ass'y,2Pin
CNS903	QCNCW010PAWZZ	J AE	Socket,14Pin
CNS904	QCNCW010MAWZZ	J AD	Socket,12Pin
CNS1252	QCNCWN1044AWZZ	J AG	Connector Ass'y,2Pin
CNS1901	QCNCW035EAWZZ	J AG	Socket,5Pin
CNS1904	QCNCWN1050AWZZ	J AH	Connector Ass'y,4-2Pin
CNW401	QCNCWN1199AWZZ	J J	C359 with Lead Ass'y
△ F802	92LFUSE252E	J AD	Fuse,T2.5A L 250V
△ F803	92LFUSE-T202E	J AD	Fuse,T2.0A L 250V

MD-X5H/CP-X5H

NO.	PART CODE	★	PRICE RANK	DESCRIPTION
△ F805,806	92LFUSET631E	J	AC	Fuse,T630mA L 250V
FE301	RTUNS0007AWZZ	J	AT	FM Front End
FL711	VVK16ST15G/-1	J	BH	FL Display
FW303	QCNWN1026AWZZ	J	AE	Connector Ass'y,6Pin
FW902	QCNWN1024AWZZ	J	AF	Connector Ass'y,11Pin
FW1901	QCNWN1042AWZZ	J	AD	Flat Cable,5Pin
JK603	QJAKH0001AWZZ	J	AH	Jack,Headphones
JK650	92LJACKL1779A	J	AG	Jack,Analog In/Output
JK651	92LJACKL1776A	J	AF	Jack,Phono
JK652	QJAKZ0009AWZZ	J	AD	Jack,Digital 2 Coaxial
M701	92LMTR1858CASY	J	AS	Motor with Chassis [Spindle]
M702	92LMTR1854BASY	J	AP	Motor with Gear [Sled]
M703	92LMTR1746A	J	AN	Motor with Pulley [Loading]
M800	92LMTR1810A	J	AK	Motor,Air Cooling Fan
M901	RMOTV0012AWZZ	J	AV	MD Spindle Motor Ass'y
M902	RMOTV0013AWM1	J	AQ	MD Sled Motor Ass'y
M903	RMOTV0014AWM1	J	AQ	MD Loading Motor Ass'y
RX701	VHL21043TH2-1	J	AG	Remote Sensor,21043TH2
SO301	QTANC0103AWZZ	J	AD	Antenna Terminal
SO601	QSOCZ0001AWZZ	J	AN	Socket,Key Board
SO801	QTANA0404AWZZ	J	AF	Terminal,Speaker
SW701	92LSWICH1749A	J	AD	Switch,Leaf Type [Open/Close]
SW702	QSW-F9001AWZZ	J	AE	Switch,Push Type [Pickup In]
SW705	QSW-K0006AWZZ	J	AC	Switch,Key Type [PRE-EQ]
SW706	QSW-K0006AWZZ	J	AC	Switch,Key Type [X-BASS]
SW708	QSW-K0006AWZZ	J	AC	Switch,Key Type [MD-STOP]
SW709	QSW-K0006AWZZ	J	AC	Switch,Key Type [MD-PLAY/PAUSE]
SW712	QSW-K0006AWZZ	J	AC	Switch,Key Type [CD-PLAY/PAUSE]
SW713	QSW-K0006AWZZ	J	AC	Switch,Key Type [CD-STOP]
SW717	QSW-K0006AWZZ	J	AC	Switch,Key Type [CD-OPEN/CLOSE]
SW727	QSW-K0006AWZZ	J	AC	Switch,Key Type [AUX]
SW728	QSW-K0006AWZZ	J	AC	Switch,Key Type [TUNER (BAND)]
SW729	QSW-K0006AWZZ	J	AC	Switch,Key Type [TRACK UP/TUNING UP]
SW730	QSW-K0006AWZZ	J	AC	Switch,Key Type [TRACK DOWN/TUNING DOWN]
SW731	QSW-K0006AWZZ	J	AC	Switch,Key Type [POWER]
SW732	QSW-K0006AWZZ	J	AC	Switch,Key Type [MD-MD EDIT]
SW733	QSW-K0006AWZZ	J	AC	Switch,Key Type [TRACK]
SW734	QSW-K0006AWZZ	J	AC	Switch,Key Type [CD-MD EDIT]
SW735	QSW-K0006AWZZ	J	AC	Switch,Key Type [MD-REC]
SW736	QSW-K0006AWZZ	J	AC	Switch,Key Type [MD-EJECT]
SW738	QSW-K0006AWZZ	J	AC	Switch,Key Type [VOLUME UP]
SW739	QSW-K0006AWZZ	J	AC	Switch,Key Type [VOLUME DOWN]
SW901	92LSWICH-1385A	J	AC	Switch,Key Type [RESET]
SW1952	QSW-P0006AWZZ	J	AG	Switch,Push Type [DIRECT]
SW1953	QSW-M0157AFZZ	J	AD	Switch,Slide Type [Lead In]
SW1954	QSW-M0002AWZZ	J	AD	Switch,Push Type [Play]
SW1955	QSW-M0002AWZZ	J	AD	Switch,Push Type [Record]
SW1956	QSW-M0001AWZZ	J	AD	Switch,Push Type [Load]
UNA650	VHPGP1F32R/-1	J	AP	AUX Digital In Digital 1 Optical, GP1F32R

MECHANICAL PARTS

1	LANGF0033AWZZ	J	AD	MD Guide (A)
2	LANGF0034AWZZ	J	AD	MD Guide (B)
3	LANGK0092AWFW	J	AM	Base Frame
4	LCHSM0060AWM1	J	AP	Drive Chassis
5	LHLDX3001AWM1	J	AP	Holder,Cartridge
6	MLEVF0024AWM1	J	AF	Lever,Cam Plate
7	MLEVF0025AWZZ	J	AD	Arm,H/A Shift
8	MLEVF0026AWZZ	J	AF	Arm,Holder
9	MLEVF0029AWM1	J	AL	Lever,Roller Arm
10	MLEVP0075AWZZ	J	AD	Lever,Clampa
11	MLEVP0076AWZZ	J	AC	Catch
12	MLEVP0077AWZZ	J	AC	Lever,Slider
13	MSPRD0103AWFJ	J	AB	Spring,Roller Holder
14	MSPRD0105AWFJ	J	AB	Spring,Spin
15	MSPRD1318AFFJ	J	AB	Spring,Shift Arm
16	MSPRD1319AFFJ	J	AB	Spring,Holder Arm
17	MSPRD1321AFFJ	J	AB	Spring,Lack
18	MSPRD1334AFFJ	J	AC	Spring,Catch
19	MSPRP0015AWFJ	J	AB	Spring,Board (A)
20	MSPRP0017AWFJ	J	AB	Spring,Drive Shaft
21	MSPRT1566AFFJ	J	AB	Spring,Roller

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
22	NGERH0066AWZZ	J	AC	Gear,Loading (B)
23	NGERH0067AWZZ	J	AC	Gear,Drive
24	NGERH0068AWZZ	J	AC	Gear,Loading (A)
25	NGERH0069AWZZ	J	AC	Gear,Roller
26	NGERR0002AWZZ	J	AC	Gear,Lack
29	NROLP0010AWZZ	J	AC	Holder,Roller
30	NROLR0001AWZZ	J	AC	Roller,Transfer
31	NSFTD0005AWFT	J	AF	Shaft,Drive
32	NSFTM0017AWFW	J	AC	Shaft,Loading Gear
33	NSFTM0277AFFW	J	AC	Shaft,Pickup Slide
34	NSFTM0278AFFW	J	AC	Shaft,Pickup Guide
35	PCOV3021AWFW	J	AL	Cover,Top
36	PCOV3022AWFW	J	AK	Cover,Bottom
37	PCUSG0531AFSA	J	AD	Cushion (A)
38	PCUSG0531AFSB	J	AD	Cushion (B)
39	PCUSS0040AWZZ	J	AC	Cushion,Head
40	RCILH0108AFZZ	J	AP	Magnetic Head
41	RCTRH8173AFZZ	J	BN	Optical Pickup Unit
42	QCNWN6715AFM1	J	AM	MD Flat Cable,24Pin
43	QCNWN6716AFZZ	J	AL	Connector Ass'y,
46	PSHEP0026AWZZ	J	AC	Sheet,H/A Shift Arm
601	LX-BZ0030AWZZ	J	AB	Screw,ø1.7×9.5mm
602	LX-BZ0031AWZZ	J	AB	Screw,ø1.7×7.5mm
603	LX-BZ0032AWZZ	J	AB	Screw,ø1.7×2mm
604	LX-BZ0804AFFF	J	AA	Screw,ø1.4×2.2mm
605	LX-BZ0846AFZZ	J	AB	Screw,ø1.7×3mm
606	LX-BZ0851AFZZ	J	AB	Screw,ø1.7×2.5mm
607	LX-BZ0852AFFD	J	AC	Screw,ø1.7×8.9mm
608	LX-BZ0883AFZZ	J	AB	Screw,ø1.7×5mm
609	LX-WZ9268AFZZ	J	AA	Washer,ø1.5×ø3.2×0.5mm
610	LX-WZ9269AFZZ	J	AA	Washer,ø1.2×ø3×0.25mm
611	XBPSD20P04K00	J	AA	Screw,ø2×4mm with Washer
612	XSPSN17P03K00	J	AB	Screw,ø1.7×3mm
M901	RMOTV0012AWZZ	J	AV	MD Spindle Motor Ass'y
M902	RMOTV0013AWM1	J	AQ	MD Sled Motor Ass'y
M903	RMOTV0014AWM1	J	AQ	MD Loading Motor Ass'y
SW1952	QSW-P0006AWZZ	J	AG	Switch,Push Type [DIRECT]
SW1953	QSW-M0157AFZZ	J	AD	Switch,Slide Type [Lead In]
SW1954	QSW-M0002AWZZ	J	AD	Switch,Push Type [Play]
SW1955	QSW-M0002AWZZ	J	AD	Switch,Push Type [Record]
SW1956	QSW-M0001AWZZ	J	AD	Switch,Push Type [Loading]

CD MECHANISM PARTS

301	NGERH0011AWZZ	J	AC	Gear,Middle
302	NGERH0012AWZZ	J	AC	Gear,Drive
303	MLEVP0010AWZZ	J	AC	Rail,Guide
304	NSFTM0002AWFW	J	AE	Shaft,Guide
305	PCUSG0427AFSC	J	AC	Cushion
△ 306	RCTRH8164AFZZ	J	BF	Pickup Unit Ass'y
306- 1				Pickup Unit (Not Replacement Item)
306- 2	NGERR0043AFZZ	J	AC	Gear,Rack
306- 3	MSPRC0961AFZZ	J	AA	Spring,Rack
701	92L2R6S+6CZ	J	AB	Screw,ø2.6×6mm
702	XHBSD20P05000	J	AA	Screw,ø2×5mm
703	XBBSD20P03000	J	AA	Screw,ø2×3mm
704	92L1R5WC3R8R25	J	AA	Washer,ø1.5×ø3.8×0.25mm
M701	92LMTR1858CASY	J	AS	Motor with Chassis [Spindle]
M702	92LMTR1854BASY	J	AP	Motor with Gear [Sled]
SW702	QSW-F9001AWZZ	J	AE	Switch,Push Type [Pickup In]

CABINET PARTS

201	HPNLC1141AWSA	J		Front Panel
202	GITAR0274AWSA	J	AQ	Rear Panel
203	GCAB-1047AWSA	J	AQ	Top Cabinet
204	GCOVA1154AWSA	J	AL	Cover,CD
205	GITAS0040AWSA	J	AP	Side Panel,Left
206	GITAS0041AWSA	J	AP	Side Panel,Right
207	92LCUSN1746A	J	AA	Cushion,Leg
208	92LN-BAND1318A	J	AA	Nylon Band,80mm
209	LBSHC0002AWZZ	J	AD	Bushing,AC Power Supply Cord
210	LANGK0098AWFW	J	AH	Bracket,PWB
211	LHLDZ1161AWZZ	J	AK	Holder,MD
212	JKNBK0048AWSA	J	AD	Knob,Mic Volume
213	GDORF0037AWSA	J	AF	MD Lid
214	LHLDZ1124AW00	J	AC	Holder,MD Lid
215	MSPRD0027AWZZ	J	AB	Spring,MD Lid
216	JKNBZ0438AWSA	J	AH	Button,MD Function
218	JKNBZ0417AWSA	J	AH	Button,CD Function
219	JKNBZ0418AWSA	J	AF	Button,Volume Up

NO.	PART CODE	★ PRICE RANK	DESCRIPTION
220	JKNBZ0419AWSA	J AF	Button, Volume Down
221	JKNBZ0420AWSA	J AE	Button, X-BASS
222	PSHEP0018AWSA	J AH	Sheet, FL Display
223	HDECQ0279AWSA	J AG	Panel, FL Display
224	HDECQ0262AWSA	J AF	Panel, Volume
225	92LCLMP1810A	J AC	Wire Holder
226	LHLDZ1001AWZZ	J AE	Holder, Mechanism
227	GCOVA1001AWSA	J AH	Disc Holder
228	LHLDM1001AWZZ	J AE	Stabilizer
229	PMAGF0001AWZZ	J AF	Magnet
230	NGERR0001AWZZ	J AE	Gear, Rack
231	92LGEAR1728B	J AC	Gear, Tray
232	92LPULLY1728A	J AB	Pulley, Drive
233	92LBELT1728A	J AB	Belt, Drive
234	LCHSM0001AWZZ	J AR	Chassis, Loading
235	LANGQ0008AWFW	J AE	Bracket, Earth
236	LANGK0094AWFW	J AH	Bracket, Main PWB
237	LCHSM0061AWFW	J AQ	Main Chassis
238	PSLDM3032AWFW	J AF	Shield, FL Display (B)
241	NFANP0001AWZZ	J AD	Rotary Fan
242	92LCSPR1431C	J AA	Ring Spring, Volume
244	LANGK0107AWFW1	J AG	Bracket, Fan (A)
245	PRDAR0097AWFW	J AG	Heat Sink, Main
246	PRDAR0098AWFW	J AG	Heat Sink, Sub
△ 248	92LLUG1746A	J AA	Terminal, Lug
△ 249	92LFSHOLD1652T	J AB	Holder, Fuse
△ 250	QACCB0003AW00	J BA	AC Power Supply Cord [For UK]
△ 250	QACCE0008AW00	J AG	AC Power Supply Cord [Except for UK]
252	PSLDM3031AWFW	J AF	Shield, FL Display (A)
253	LHLDZ1086AWZZ	J AE	Holder, FL Display
254	LANGK0109AWFW	J AD	Bracket, Key Jack
255	PRDAR0092AWFW	J AL	Heat Sink (A)
256	PRDAR0105AWFW	J	Heat Sink (B)
257	PSLDM3042AWFW	J	Shield, Phono
258	LANGK0108AWFW1	J	Bracket, Fan (B)
259	PSPAS0003AWZZ	J AC	Spacer, Fan Support
260	TCAUS0028AWZZ	J AB	Label, Laser Caution 3B
261	PCUSG0008AWZZ	J AB	Cushion, Gum
262	NBRGC0003AWZZ	J AC	Bearing Metal
263	MSPRD0108AWFJ	J AC	Spring, Fan Motor
264	MSPRD0002AWFW	J AC	Spring, Key Earth
265	TLABS0140AWZZ	J AD	Label, Caution [For UK Only]
266	RCORF0002AWZZ	J AE	Core
267	92LCAUT1706A	J AB	Label, Laser Caution 3A
268	92LCAUT1706B	J AA	Label, Laser Caution 3A
269	TSPC-0472AWZZ	J AD	Label, Specifications
601	XJBSN30P10000	J AA	Screw, ø3×10mm
602	XHBSD30P10000	J AA	Screw, ø3×10mm
603	XHBSD30P06000	J AA	Screw, ø3×6mm
604	LX-JZ0010AFDD	J AA	Screw, ø3×10mm
605	XJBFSF30P08000	J AA	Screw, ø3×8mm
606	XBPSD30P10KS0	J AA	Screw,
607	LX-HZ0082AFZZ	J AA	Screw, ø4×8mm
608	XEBSD30P08000	J AA	Screw, ø3×8mm
609	LX-WZ7003AWZZ	J AB	Washer, ø3.2×ø13×1.0mm
610	XEBSD26P10000	J AA	Screw, ø2.6×10mm
611	LX-EZ0005AWFD	J AA	Screw, Special
612	XEBSD26P08000	J AA	Screw, ø2.6×8mm
613	XBPSD26P05JS0	J AA	Screw, ø2.6×5mm
614	LX-BZ0880AFZZ	J AC	Screw, ø2×4mm
615	XEBSF30P10000	J AA	Screw, ø3×10mm
616	XJBSD30P08000	J AA	Screw, ø3×8mm
617	XJBSD30P14000	J AA	Screw, ø3×14mm
618	XHSSD30P06000	J AA	Screw, ø3×6mm
619	XWHS32-10130	J AA	Washer, ø3.2×ø13×1.0mm
620	XWSSN32-07000	J AB	Washer, ø3.2mm
621	XHBSN30P10000	J AA	Screw, ø3×10mm

ACCESSORIES/PACKING PARTS

1	SPAKC0576AWZZ	J AU	Packing Case
2	SPAKA0149AWZZ	J AM	Packing Add., Left/Right
3	SSAKH0024AWZZ	J AD	Polyethylene Bag, Unit
4	92LBAG1460C1	J AB	Polyethylene Bag, Accessories
5	QANTL0001AWZZ	J AL	AM Loop Antenna
6	TINSE0186AWZZ	J AP	Operation Manual [For UK]
6	TINSZ0271AWZZ	J AR	Operation Manual [Except for UK]
7	92LBAG1770A	J AB	Polyethylene Bag, AC Power Supply Cord [For UK Only]

NO.	PARTS CODE	★ PRICE RANK	DESCRIPTION
8	SPAKP0050AWZZ	J AC	Polyethylene Bag, Operation Manual
9	92LF-ANT1535A	J AF	FM Antenna
10	RRMCG0111AWSA	J BB	Remote Control
10-1	GFTAB1020AWSA	J	Lid, Remote Control
11	TLABE0197AWZZ	J AB	Bar Cord Label
12	TCAUH0042AWZZ	J	Caution, Key Board [Except for UK Only]
13	TCAUZ0032AWZZ	J	Caution, Phono [Except for UK Only]

P.W.B. ASSEMBLY (Not Replacement Item)

PWB-A1,2	92LPWB2607TUNS	J —	Main/Jack
PWB-B1~3	92LPWB2607PWRS	J —	Power Supply/Display/Power Amp.
PWB-C	92LPWB2607SYSS	J —	CD Servo
PWB-D	92LPWB2603MDSS	J —	MD Main
PWB-E	QPWBF0027AWZZ	J AD	CD Motor (PWB Only)
PWB-F	QPWBF0400AWZZ	J AC	MD Mechanism Switch (PWB Only)

CP-X5H

SPEAKER BOX PARTS

701	92L312-0065	J AQ	Front Panel
702	92L121-0108	J AN	Net Frame Ass'y, Top
703	92L121-0109	J AN	Net Frame Ass'y, Bottom
704	92L051-0047	J AZ	Speaker Box Ass'y
705	92L316-0045	J AG	Duct Pipe
706	92L291-0057	J AK	Speaker Cord
707	93L351-0210	J	Label, Specifications
708	92L109-0006	J AH	Panel, Decoration, Left
709	92L372-0064	J AB	Screw, ø4×16mm
710	92L372-0092	J AB	Screw, ø3×8mm
711	92L109-0007	J	Panel, Decoration, Right
712	92L351-0211	J AE	Label, Decoration
C1,2	92L293-0055	J	1.5 µF, 50V, Electrolytic, Non-Polar
SP1,2	VSP0012PBE86A	J BA	Speaker, Woofer
SP3,4	VSP0050TBH76A	J AT	Speaker, Tweeter

ACCESSORIES/PACKING PARTS

1	92L412-0089	J AL	Packing Add., Top/Bottom, Speaker
2	92L411-0089	J AC	Polyethylene Bag, Speaker
3	92L414-0017	J AD	Sheet
4	TLABM0047AWSA	J AK	Label, Feature [Except for UK]
4	TLABM0048AWSA	J AK	Label, Feature [For UK]

MD-X5H

This exploded view diagram illustrates the assembly of the MD-X5H unit. The components are labeled as follows:

- 306**: A bracket assembly consisting of **306-1** (a hexagonal base), **306-2** (a long thin plate), and **306-3** (a small screw).
- 701**: A long horizontal rod.
- 702**: A small screw used to secure the bracket assembly.
- 303**: A long thin plate component.
- 304**: A circular disc component.
- 302**: A circular disc component.
- 301**: A circular disc component.
- 703**: A small screw used to secure the disc components.
- M701**: A large cylindrical component.
- 305x2**: Two small cylindrical components.
- M702**: A large cylindrical component.
- 305**: A small cylindrical component.
- SW702**: A small switch component.
- PWB-E**: The main printed wiring board (PWB) at the bottom of the assembly.

The diagram shows the assembly sequence from the PWB-E at the bottom, through the disc components (301, 302, 304), the rod (701), and the bracket assembly (306) to the top. The switch (SW702) and other small components (305, 305x2) are also shown in their relative positions.

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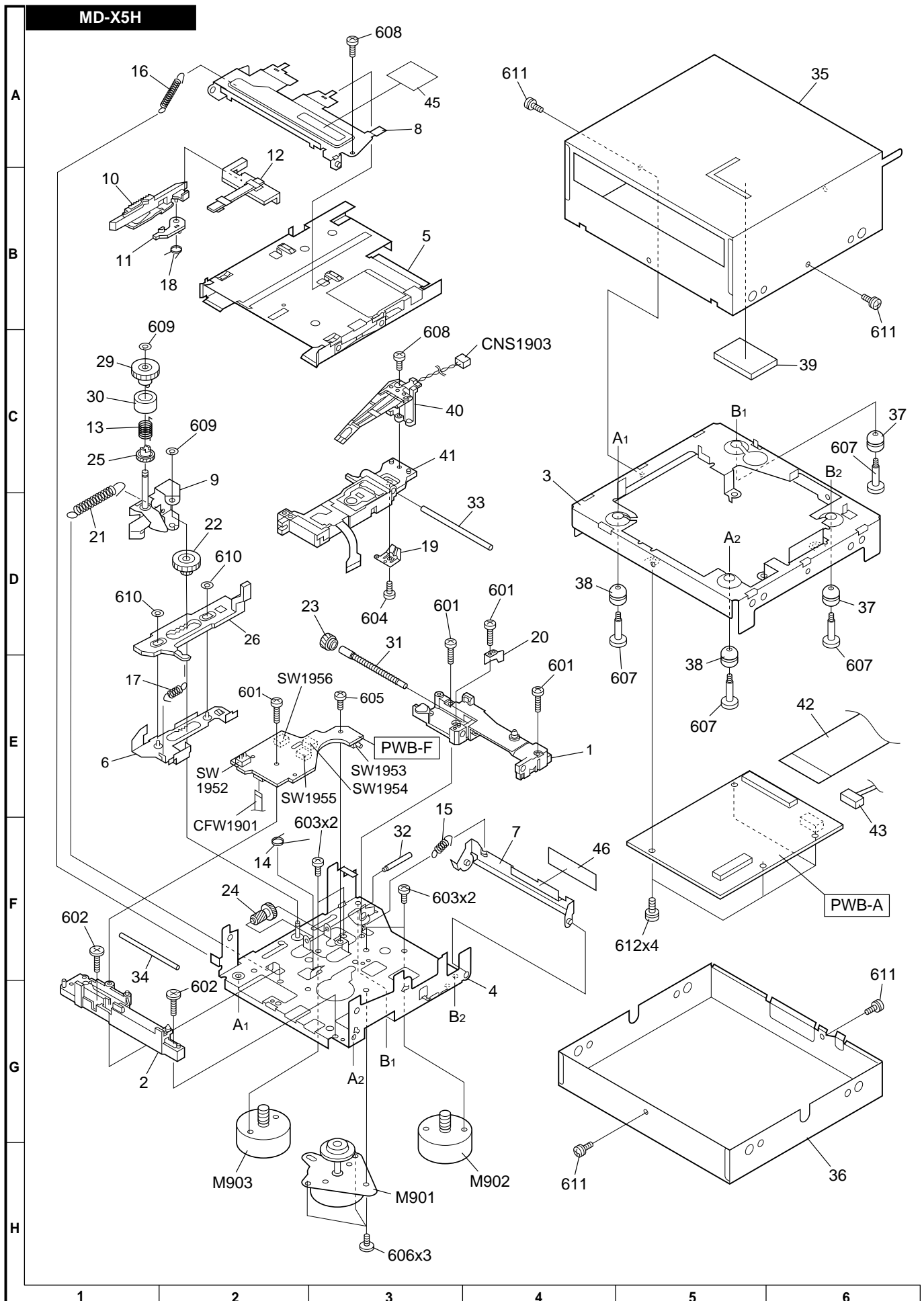


Figure 10 MD MECHANISM EXPLODED VIEW

MD-X5H/CP-X5H

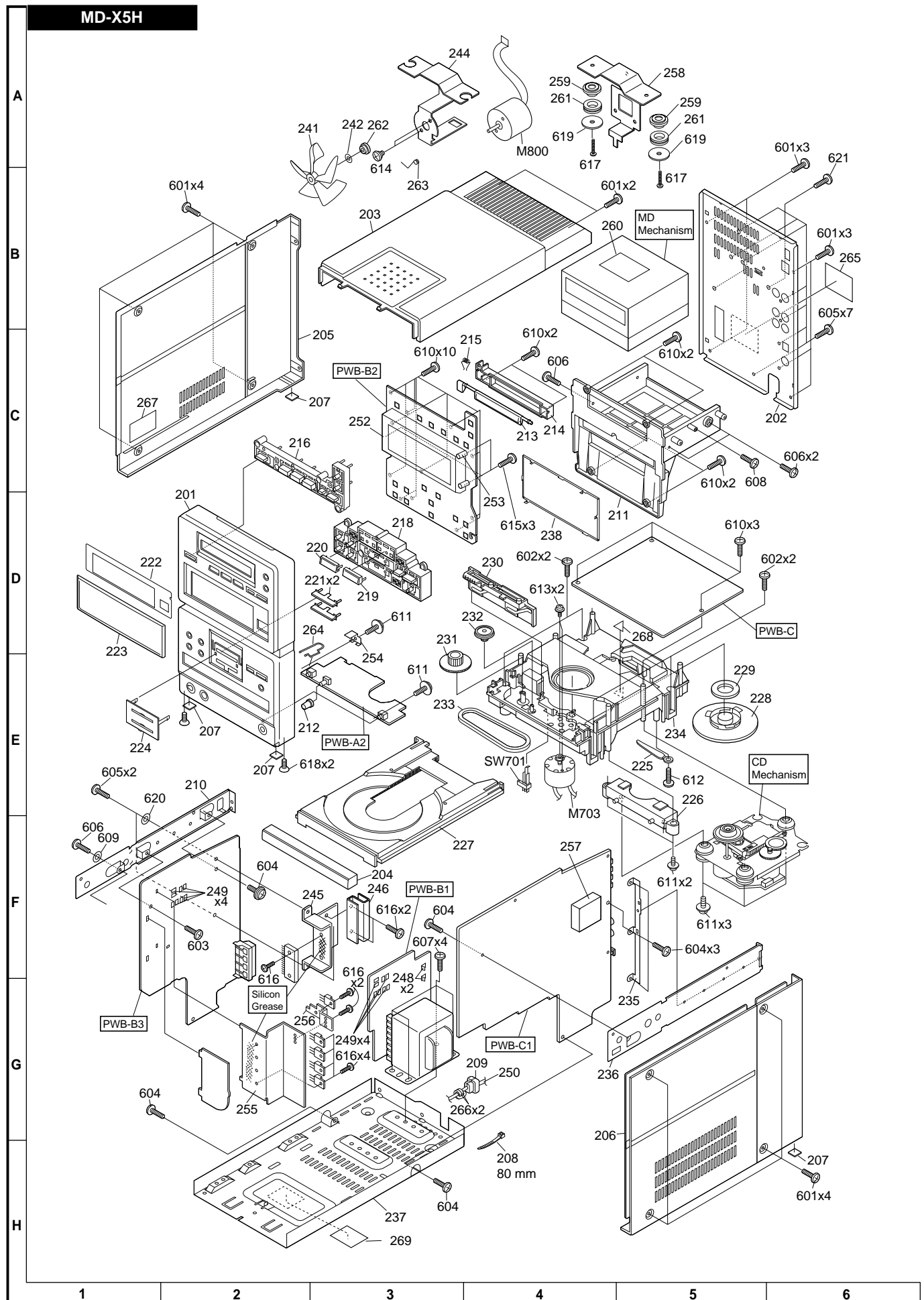


Figure 11 CABINET EXPLODED VIEW

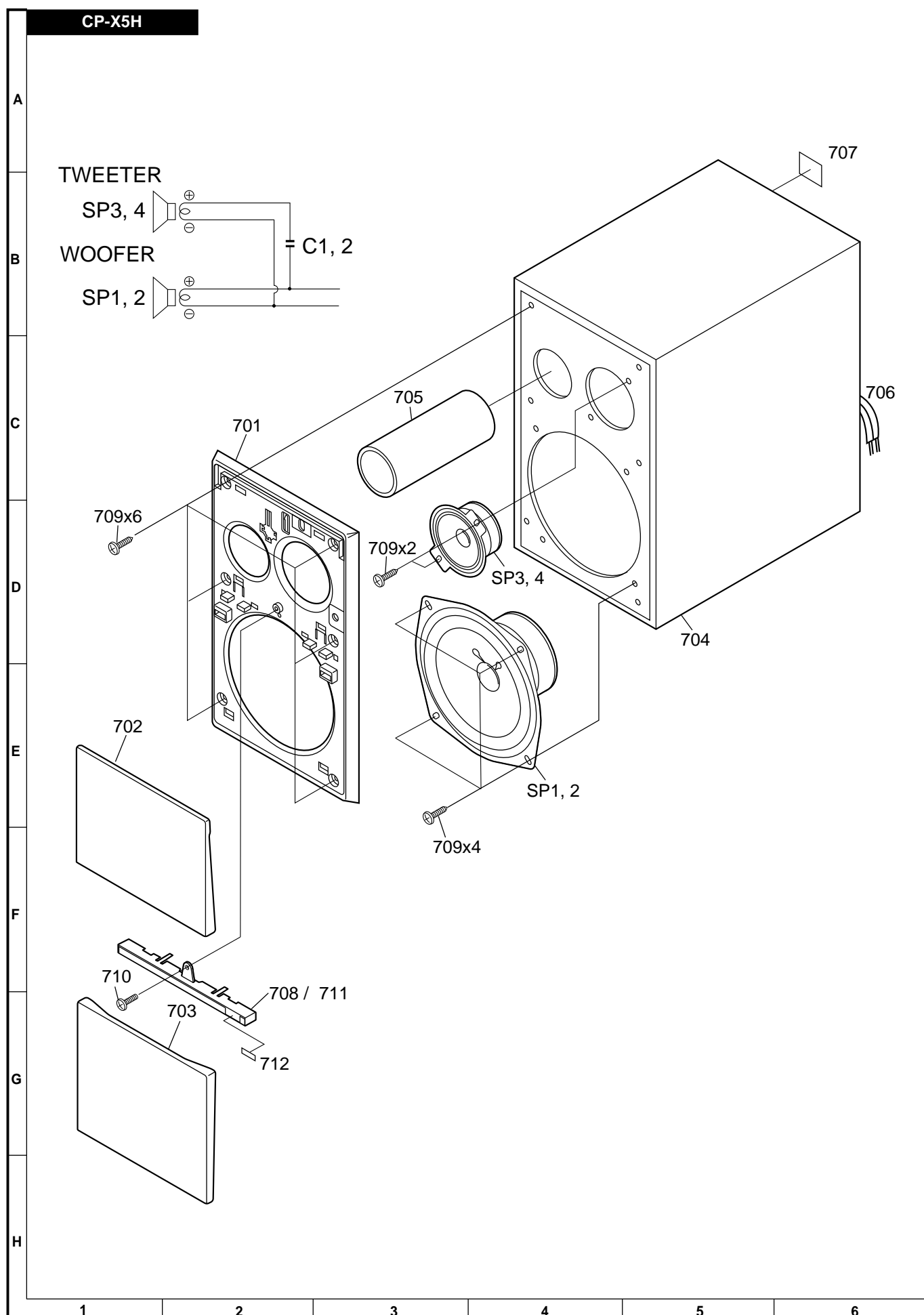


Figure 12 SPEAKER EXPLODED VIEW

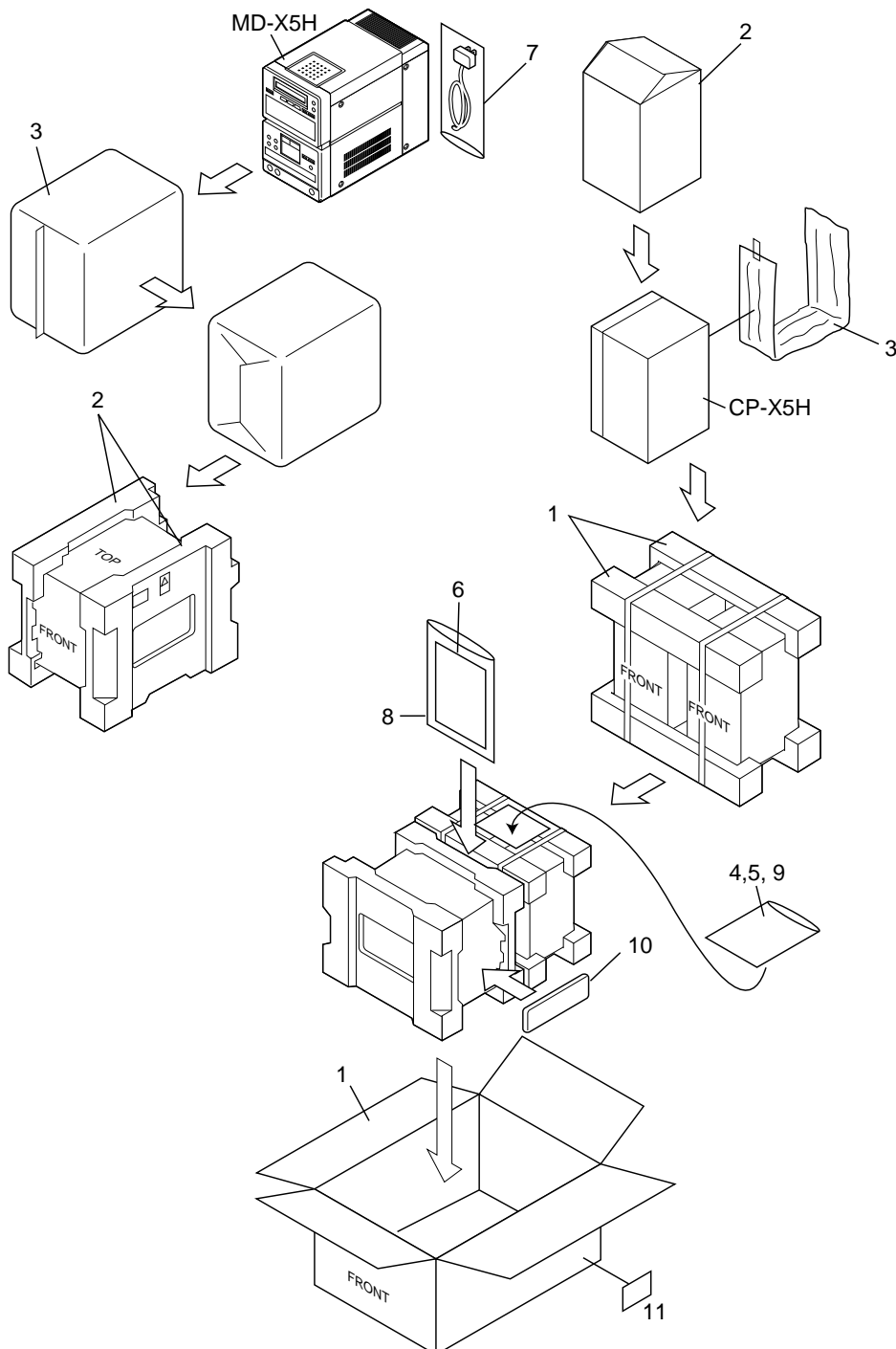
PACKING OF METHOD (FOR UK ONLY)

MD-X5H

- | | |
|---|---------------|
| 1. Packing Case | SPAKC0576AWZZ |
| 2. Packing Add., Left/Right | SPAKA0149AWZZ |
| 3. Polyethylene Bag, Unit | SSAKH0024AWZZ |
| 4. Polyethylene Bag, Accessories | 92LBAG1460C1 |
| 5. AM Loop Antenna | QANTL0001AWZZ |
| 6. Operation Manual | TINSE0186AWZZ |
| 7. Polyethylene Bag, AC Power Supply Cord | 92LBAG1770A |
| 8. Polyethylene Bag, Operation Manual | SPAKP0050AWZZ |
| 9. FM Antenna | 92LF-ANT1535A |
| 10. Remote Control | RRMCG0111AWSA |
| 11. Bar Cord Label | TLABE0197AWZZ |

CP-X5H

- | | |
|--------------------------------------|---------------|
| 1. Packing Add., Top/Bottom, Speaker | 92L412-0089 |
| 2. Polyethylene Bag, Speaker | 92L411-0089 |
| 3. Sheet | 92L414-0017 |
| 4. Label, Feature | TLABM0048AWSA |



— M E M O —

MD-X5H/CP-X5H

— M E M O —

— M E M O —

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